

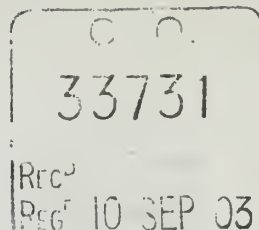
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REPORT



2.

On the Small-Pox Epidemic in Barbados 1902-1903.

BARBADOS.

The Hon. W. K. CHANDLER, C.M.G., J.L.D.,
Colonial Secretary, Acting.

Sir,

I have the honour to forward, for the information of His Excellency the Hon. S. W. Knaggs, Acting Governor, the following report on the recent epidemic of small-pox in Barbados, which commenced with a case imported from Canada and notified on February 23rd, 1902, and ended on April 20th, 1903, with the discharge of the last two patients from the Pelican Island hospital. During this period there were two apparent outbreaks; but it is probable that the second was directly continuous with the first, although from May 23rd to July 14th, 1902, it was not known to the sanitary authorities that the disease existed. The total number of cases was 1,466 with 119 deaths.

Delay.

1. I regret the delay in issuing this report. Five days after the official notification of the termination of the epidemic I forwarded a circular to the eleven boards of poor law guardians in the colony, asking the favour of reports from their medical officers on the epidemic in each parish. The co-operation of the boards was cordial; but in some parishes the reports were delayed, and the last one was received on July 21st. Up to the present date no report has been received from the parochial medical officer of district No. I, St. Michael.

District Medical Service.

2. The district medical service of the colony is under the supreme control of the local authorities in each parish. The vestries and the boards of poor law guardians have authority over the medical officers in poor law matters, but not in sanitary work; while the boards of Sanitary Commissioners (who are appointed by, but quite independent of the vestries, to the extent of being able to requisition from the vestries the sums of money necessary for sanitary purposes, and who are responsible for sanitary administration including the management of epidemics), have no control or authority over the medical officers, whose sanitary duties under the Poor Relief Act are confined to quarterly reports to the poor law guardians on the sanitary condition of their parishes. Quite recently these reports have been by legislation ordered to be forwarded to the sanitary board in each parish.

3. It will be seen therefore that the preparation of these special small-pox reports has been entirely an act of grace on the part of the medical officers, and I desire here to express my thanks to those gentlemen who have prepared them, and my indebtedness to the boards of poor law guardians for obtaining the reports from the medical officers. All the reports received are attached to this report as appendices, and many of them will be read with interest.

Management of the Epidemic

4. The supreme sanitary authority in the colony is vested in the General Board of Health appointed by commission from the Governor with the consent of the Executive Committee. This Board has extensive legislative authority under the Public Health Act, exerted (1) by means of rules and regulations for promoting the public health and (2) by special orders and directions for the prevention and mitigation of infectious diseases, which all have the force of law, subject to the approval of the Governor-in-Executive Committee in the case of the former and of the Governor in the case of the latter. The Board of Health however possesses no direct executive authority. The sums of money voted by the legislature for the control of this epidemic were however vested in the Board of Health and disbursed by its authority, so that the Board was in a position to assume general advisory powers and a certain amount of executive control.

5. The direct management of the epidemic devolved upon the Sanitary Commissioners in each parish, who are legally responsible under the Public Health Act; but at the outset some confusion existed as to the authorities responsible. A timely memorandum issued by His Excellency the Governor, Sir F. M. Hodgson, clearly and ably defined the relative responsibilities of the central and local boards in accordance with the existing law, and a critical situation was thereby averted. This memorandum is attached as Appendix XIII.

6. This is the first occasion in the history of the colony when an epidemic of this

magnitude has been dealt with on modern lines, and it was inevitable that there should be some initial difficulty in co-ordinating the functions of the central and local boards; but an efficient working system was gradually evolved under which the Board of Health indicated the general line of policy, while the Sanitary Commissioners carried out the details in each parish.

7. The thanks of the colony are due to His Excellency the Governor, who has throughout acted as the general director of the policy of control, and has in a strenuous and clear-sighted manner dealt with many important details connected with the epidemic both in its internal domestic relations and in its inter-colonial aspects with reference to quarantine.

8. I desire also to direct attention to the untiring energy of the President of the Board of Health, the Hon. W. K. Chandler, and the unceasing labours of the Clerk, Mr. James Sanderson, who has throughout the epidemic displayed much energy and devotion. The local sanitary authorities have done good work, and, as His Excellency the Governor has well said, "have vindicated their existence."

The general result has been on the whole creditable and satisfactory, the experience gained has been valuable, and the working system will be useful in future epidemics.

HISTORY OF THE EPIDEMIC.

Defenceless Condition of the Colony.

9. At the beginning of the epidemic the colony was practically unvaccinated. There had been a prolonged neglect of vaccination, and no regular system of public vaccination had ever existed. Vaccination had only been practised to a small extent amongst the better classes, except at long intervals when an epidemic existed in some neighbouring colony. On two or three such occasions sums of money had been voted for the purpose, and limited numbers of the population (chiefly school children) had been vaccinated. The last epidemic occurred nearly 40 years ago, and the necessary stimulus having been long absent, it happened that large numbers of the population of 196,000 (variously estimated at from 50 to 75 per cent) had never been vaccinated, and re-vaccination was practically unknown.

10. Further, a certain amount of anti-vaccination literature had from time to time appeared in one of the local newspapers, which had somewhat discredited the efficacy of vaccination. Consequently the attitude of the large portion of the general public was one of uncertainty, if not of actual hostility with regard to vaccination.

11. Small-pox was a notifiable disease; but no provision had ever been made for isolation of infectious cases, which was generally resented as an infringement of the liberty of the subject. A storm of protest had been raised not long before on a proposal to pass rules for the isolation of cases of yellow fever, so that it was plain that public opinion was not yet ripe for modern scientific methods of dealing with infectious disease.

12. The colony has no medical officer of health.

Origin.

13. Such was the situation when a man sickening with small-pox arrived here from Canada on Feb. 20th. Small-pox was known to be prevalent in Halifax, but no quarantine restrictions had been considered necessary when dealing with the ports of departure of steamers from England, the United States, and Canada; and, as the man was not reported ill on arrival, the ship was admitted to pratique. He had been ailing on the day before his arrival, and he was seen by a physician on the day after (the 21st). In the evening of the 22nd a rash began to appear and on the 23rd, when his medical attendant again saw him, it was quite apparent that the man had small-pox. He was seen by the two health officers on the port, and, as there was no doubt about the diagnosis of the case, it was at once reported to the Governor, who authorised the removal of the patient and everyone living in the house with him to the hospital at the quarantine station on Pelican Island. This was done without delay on the same day, which was Sunday, and the assistant health officer of the port, Dr. Manning, was asked to take charge of him.

14. Next day, February 24th, the Board of Health met and passed rules for isolating all cases of small-pox after notification, together with all persons residing in the same house, or being in the house at the time; and where such cases could not be effectively isolated in their homes, removal to the Pelican Island hospital was ordered.

15. On the following day (25th) the patient died at Pelican Island and was buried at sea. His four contacts remained at Pelican Island for 18 days when they were released. Two of them were vaccinated on admission to Pelican Island, but his wife and his mother, the latter of whom had suffered from small-pox previously, refused to be vaccinated. It is not recorded whether any of them had been previously vaccinated, or whether the first patient had been ever vaccinated.

16. Due warning of the necessity of vaccination as the best method of combating the disease, and of the futility of relying on isolation alone was volunteered to the executive by the Poor Law Inspector on February 28th.

17. This first case had occurred in Chelsea Lane in the outskirts of the town near St. Ann's Garrison. On March 22nd a few days after the release of the first contacts a woman was discovered on the 9th day of eruption at Britton's Hill about $\frac{1}{2}$ a mile from the house of the first case. She also lived in Chelsea Lane and had been visited by the first case on the day of his arrival from Halifax; but discovering the risk she ran of isolation as a contact, she had secreted herself at her mother's house at Britton's Hill, where she sickened and remained about 12 days undiscovered. The case was sent to Pelican Island along with 6 contacts found in the house with her, and on the two following days 15 more contacts were isolated, including one of her sisters who had been admitted to the General Hospital 3 days previously and had developed the eruption of small-pox there. It may here be noted that her mother, three sisters, one brother, and three children, who lived in the house, all had small-pox at Pelican Island.

18. Three days after another undiscovered contact was notified from the hospital out-patient room. Twelve days later on April 8th another contact appeared in the hospital out-patient room in the maturation stage of the disease, while on the same day the unvaccinated nurse who had attended to the first hospital case and had been isolated, was also notified and sent to Pelican Island. The former of these cases was of confluent type and was seen by 8 medical men, and with one exception we were all unanimous in declaring it well-marked small-pox.

19. After these 5 cases no one was attacked in the town, but 11 of the contacts at Pelican Island contracted the disease, making a total of 16 cases. No death occurred from the disease, although some of the cases were severe. Two children died at Pelican Island—one of meningitis, 9 months of age, and another of what appears from the records as congenital syphilis, 18 months of age. No definite record of the cause of death is given however, and congenital syphilis is inferred from the clinical symptoms recorded in the medical officer's journal. It is stated definitely that this child did not have small-pox. A total of 27 contacts escaped the disease at Pelican Island and District "A" (the old lunatic asylum), which was used as a contact station when Pelican Island was full. All the contacts were vaccinated on admission.

20. At the outset the Board of Health had assumed control of the epidemic, but, after a short period the Sanitary Commissioners of St. Michael, who were legally responsible, took over the management.

Dr. Manning, the assistant health officer of the port, was appointed to attend the Pelican Island hospital, and to visit all suspected cases, which were numerous owing to an epidemic of chicken-pox of definite type which had been prevalent for some months.

21. On April 23rd, 15 days after the notification of the last case in the town, clean bills of health were issued to the shipping, and on May 23rd the last patient was discharged from Pelican Island.

22. Meanwhile the whole press and general public were incredulous about the existence of small-pox in the island. There was no sufficient stock of vaccine lymph available, and a laudable effort made by Dr. Bannister, the health officer of the port, with the assistance of Dr. G. C. Low, of the London School of Tropical Medicine, to start a supply of calf lymph locally was severely criticised, and the experiment was not continued.

Thus the hostility or indifference to vaccination, combined with the scepticism that generally existed about the actual presence of the disease, led to the loss of valuable time, and practically no vaccination was done except in the case of contacts and those likely to be exposed, such as medical men and nurses, who realised the importance of it.

23. On March 24th—two days after the occurrence of the second case—the Board of Health called the attention of the local Sanitary Boards to the existence of small-pox and to the necessity for taking steps to deal with a possible epidemic: they were further reminded that under the Public Health Act the elementary schools were liable to be used as temporary hospitals, and they were asked to recommend suitable schoolhouses for this purpose. On their recommendation the Board of Health appointed certain schoolhouses in each parish to be used for an epidemic, and this action was confirmed by the Governor-in-Executive Committee on April 17th.

24. On May 10th the legislature passed the first vaccination bill, which imposed on the parochial medical officers the duty of vaccinating all paupers free, and all other persons living in the several parishes at a fee of 6d. each, to be paid by each individual. The lymph was to be provided free at the expense of the Government. The parochial medical officers accepted the situation without protest; but the measure proved to be useless, and no applications for vaccination were made under it.

Second Outbreak.

25. After May 23rd, when the last case was released from Pelican Island, a false sense of security prevailed until July 13th, when an undoubted case of small-pox was notified in a slum in Bridgetown, and on the same day a woman, who applied for medical treatment at the Parochial Building with the eruption fully developed, escaped some 10 miles into the country to the parish of St. Joseph, where she was notified next day and brought back to Pelican Island. This woman lived on the opposite side of the town and at least a mile

from the other case, and no connection was traced. On her way home from the Parochial Building she stopped for a short time at a house in the town where she infected two of the inmates, one of whom sickened 13 days after and went home to the parish of St. James, where he remained 13 days before he was discovered. This was the origin of the worst local outbreak that occurred, viz., the Baywood Village epidemic, which comprised more than 400 cases. This outbreak is described in the report of the medical officer of St. James (Appendix VIII), and also in a special report of the Poor Law Inspector made during the course of the outbreak at the request of the Governor (Appendix XV). This same woman already referred to infected one of the parochial officials during her visit to the Parochial Building, who had suffered from the disease 40 years ago.

Hospital Arrangements.

26. In a short time it was evident that a general epidemic was imminent, the Pelican Island hospital was re-opened under the control of the Sanitary Commissioners of St. Michael (Bridgetown), and Dr. Browne, one of the parochial medical officers, was appointed to take charge.

27. The first cases together with their contacts were isolated at Pelican Island, but as the numbers increased the contacts were received at the old lunatic asylum, and arrangements were made to enlarge the accommodation at Pelican Island by the erection of one permanent and three temporary wards (the latter consisting of huts provided by the War Department for the reception of Boer prisoners, but which had never been used). There was great pressure on the accommodation here later on and before these wards were completed, and this is well described by Dr. Bridger in his report attached herewith. The total accommodation finally provided was 248 beds.

28. The Hospital at Pelican Island was used primarily for the parish of St. Michael, but some of the first cases from other parishes were received here until the several local authorities completed their arrangements for the treatment of patients. Dr. Browne continued in charge, and the feeding of patients was done from the St. Michael Almshouse (about 1 mile away), which is under the control of the local authorities of this parish. It soon became apparent however that it would be necessary to have a medical officer to devote his whole time to this hospital. No one was available locally for this purpose, and the Board of Health, on proposing to assume responsibility for Pelican Island hospital, was fortunate in obtaining the services of Dr. J. F. E. Bridger from Antigua, where he had been acting as civilian surgeon to the troops sent there in anticipation of the arrival of Boer prisoners. Dr. Bridger proved himself a capable and energetic officer, and in the management of this large hospital single-handed he evinced administrative ability of a high order. His admirable report on this hospital is attached to this report.

In addition to the charge of the hospital Dr. Bridger in the early part of the epidemic occasionally visited doubtful cases in the country districts for purposes of diagnosis, and supervised the disinfection of mails sent to the neighbouring colonies which demanded such disinfection.

29. As the epidemic spread to the country parishes arrangements were completed for temporary hospitals. In the parishes of St. Philip, Christ Church, St. John, one or more of the elementary schools already appointed for the purpose were rapidly fitted up. In the parishes of St. George, St. James, and St. Lucy the schools fixed on were found for various reasons unsuitable, and others were at this time appointed. In St. Thomas, St. Peter and St. Andrew the schools were not used; in St. Thomas a suitable house was obtained, and in St. Peter and St. Andrew suitable buildings were erected. In St. Lucy a thoroughly equipped hospital was provided in one of the schools, but it was never used. Only 6 cases occurred here at a late period, and it was thought more desirable to send them to Pelican Island hospital.

In St. Joseph a suitable building was hired, but it soon proved to be inadequate, and the school originally appointed was used for a short time until new buildings were erected.

In seven parishes one or more schools were used (in St. Joseph for a short time only) and in three parishes buildings were either hired or erected.

Temporary Hospitals.

PARISH.	No. of cases treated.	Description of Hospital.
St. Philip	3	Bayley's School
Christ Church	43	Kingsland Boy and Girl Schools (a few yards apart)
St. George	43	St. Helen's School and two small wooden buildings purchased and erected.
St. John	13	Church Schools—Boy and Girl—in the same building.
St. Thomas	11	Applegrove House.
St. James	* ?	St. Silas Boy School and Infant School in Baywood Village— $\frac{1}{4}$ mile apart.
St. Peter	32	Special wooden buildings—one of new material, and two used wooden buildings purchased and moved to the site.
St. Lucy	0	Durham School.
St. Andrew	4	Old building repaired.
St. Joseph	96	Little England house and two new wooden buildings.

* 432 cases treated locally, but many in their own houses in the village. Hospital accommodation 69—70.

Other cases occurred in some of these parishes which were treated at Pelican Island hospital after December 31st, 1902, when all the temporary hospitals were closed.

30. The temporary hospitals were duly inspected by the poor law inspector under the Poor Relief Act, 1892. Minutes of inspection with suggestions and criticisms were forwarded to His Excellency the Governor and to the Poor Law Board, and sent on by the latter to the Board of Health, who in turn forwarded them to the local boards of Sanitary Commissioners. This round-about system of communication was officially necessary owing to the complete separation between the poor law and the sanitary systems of the colony.

31. The efficiency of these hospitals varied considerably, but on the whole they were sufficient for the needs of the epidemic, saved lives, and alleviated suffering. Being strictly guarded and isolated, they fulfilled an important function, viz., that of preventing each individual case from being a source of infection during the whole of its infectious period, as would have happened if it had been treated at home in its own village.

The St. Joseph hospital was the most highly commended, and the St. George hospital the most severely criticised in the minutes of the poor law inspector.

32. On September 6th a convalescent hospital was opened at the old lunatic asylum, District "A," to relieve the pressure on the Pelican Island hospital, which was excessive during September and October. During October this hospital also relieved the St. James hospitals in Baywood Village, which were insufficient for the needs of the extensive localised epidemic there.

The report of this hospital is attached as Appendix I.

Control Measures.

33. The epidemic gradually spread until every parish had been infected. In St. Philip, St. John, St. Thomas, St. Peter, St. Lucy and St. Andrew the epidemic was well controlled and never became widespread.

In St. George and Christ Church the numbers were larger owing to frequent infection from St. Michael, but control measures were steadily pursued, and the epidemic never got out of hand.

In St. James and St. Michael the epidemic was severe. In St. James the disease was not discovered until many persons had been infected, and in one district, known as Baywood Village, the epidemic for some time got completely out of hand, partly because there was not a sufficient supply of vaccine lymph available, and partly because isolation was not resorted to soon enough. Eleven other districts in the parish became infected, but in all these control measures were thoroughly used and the disease never spread. The course of the epidemic in St. James, which presented many interesting features, is described in Appendices VIII and XV.

34. The control measures generally adopted were (1) isolation or removal of the patient to hospital, (2) disinfection of the house, (3) vaccination of the surrounding population as far as practicable, and (4) subsequent inspection of the infected districts.

On August 26th the Board of Health requested the several boards of Sanitary Commissioners to organise a system of house-to-house inspection throughout their parishes for the purpose of discovering cases of small-pox. This was adopted and carried out successfully in ten parishes without any difficulty. In the parish of St. Michael this system was not adopted, the Commissioners finding a difficulty in the alleged want of legal authority for the purpose. Nearly four months later it was proposed at the Board of Health to pass a special order directing this to be done; but a compromise was effected, and a system of house-to-house visitation combined with special forms of enquiry was instituted. This did not result in the discovery of many cases, as it was near the end of the epidemic; but it had the effect of showing the people that the authorities were determined to stamp out the disease.

Other control measures used at the beginning of the epidemic were (1) the burning of houses, which was only done in 3 or 4 cases and (2) the isolation of contacts, as already described. At the end of the epidemic in the parish of St. George a recrudescence of the disease occurred; and, finding that the people were resisting vaccination, the local authorities with the approval of the Board of Health again started the contact system for all unvaccinated persons. This had the desired effect, and the courage of the local authorities—in this case the parochial medical officer—in adopting and carrying out this method is highly commendable. This incident is described in the report of the medical officer of St. George (Appendix V.)

At the end of the epidemic to ensure the speedy discovery of new cases rewards were offered, first of ten shillings and later on of one pound, for information leading to the detection of new cases. This had an excellent effect and some cases were discovered in this way, which would probably have prolonged the epidemic.

35. On February 26th, 1903, a most important Public Health (Amendment) Act was passed by the Legislature under which authority is given to the Commissioners of Health in any parish to declare any parish or district to be an area infected with small-pox, and under these conditions no persons can leave an infected area or a house in which small-pox exists, unless they have had small-pox or have been vaccinated, and have also been disinfected.

This measure, which would have been most useful at the beginning of the epidemic, is a valuable addition to the Public Health Act; and, although it was not used, it demonstrated most unmistakably the intention of the authorities to leave nothing undone to control this and future epidemics of small-pox.

Difficulties of carrying out Control Measures.

36. Isolation and removal from their houses were resented by persons affected, and to avoid these restrictions many persons suffering from small-pox escaped to the houses of friends and relations in other districts, and thus a constant infection of new areas occurred. In some cases removal was resisted—in one case successfully. In three others the services of the police were required before the patients were removed, and in a populous suburb of the town a small riot occurred after the police appeared to enforce the action of the sanitary authorities. The Governor promptly published a useful minute pointing out the necessity of control measures and the folly of resisting them, and there was no recurrence of this incident. The Governor's minute is attached (Appendix XIV).

37. The ordinary hostility and indifference to vaccination to a large extent disappeared as soon as the epidemic had compelled recognition of its real nature, but opposition founded on religious grounds and of a more serious nature showed itself in two infected districts, and certainly delayed the stamping out of the epidemic. The situation created by this opposition in the Baywood epidemic in St. James is described in Appendix XV, and another instance of this difficulty will be noticed in the account of the recrudescence in St. George at the end of the epidemic (Appendix V).

In the former case the opposition appears to have been overcome by the reality of the evidence in favour of vaccination in this severely infected village, and in the latter by the isolation measures adopted in the case of persons who refused vaccination.

Vaccination Arrangements.

38. At the time of the outbreak there was no system of public vaccination in the colony. The *Vaccination Act* of May 10th 1902, providing for the vaccination of paupers free and all other persons for a fee of 6d, payable by themselves, has already been mentioned. This act was inoperative.

A *Vaccination (Amendment) Act* was passed on August 22nd, after the epidemic was in full course and about 100 cases had occurred. This authorised the Governor-in-Executive Committee to appoint public vaccinators who were to be paid at the rate of 6d. for each vaccination, the lymph being as in the first Act, furnished at the expense of the Government. The bill proposed that all registered medical practitioners and registered druggists and all persons licensed by the Governor should act as public vaccinators; but, as amended the public vaccinator was "every person appointed by the Governor".

The principle of appointing lay vaccinators was held to be necessary in view of the

urgent situation that existed, viz., a small-pox epidemic in a population practically unvaccinated.

The Governor appointed all registered medical practitioners and registered druggists, and asked the local Boards of Sanitary Commissioners to recommend fit and proper persons after a certificate of suitable instruction had been obtained.

In several parishes there was considerable delay on account of the refusal of the parochial medical officers, either to admit the necessity of appointing lay vaccinators or to give them a certificate of instruction. A situation of great difficulty arose, and after considerable friction between the Governor and some of the local authorities, the matter was adjusted. The local Sanitary Commissioners recommended public lay vaccinators, and in parishes where the medical officers refused to give a certificate of instruction, the poor law inspector was asked by the Governor to do so.

The census districts of 1891 were appointed as vaccination districts, and the total number of public vaccinators appointed was 259 for an estimated population of 196,000.

39. Vaccination now proceeded rapidly for a time, but when upwards of 59,000 persons had been vaccinated, the numbers began to fall off on account of the consequent illness, which in many cases incapacitated the breadwinners temporarily, and made it necessary to apply for poor relief.

For these reasons a *Vaccination (Further Amendment) Act* was passed on October 29th 1902, giving a bonus of 6d. to each person vaccinated successfully, or re-vaccinated. This had the desired effect and vaccination went on steadily. On December 31st upwards of 103,000 persons had been vaccinated, and on April 12th 1903, the total numbers returned as vaccinated amounted to 125,222. This Act expired when clean bills of health were issued.

It is probable that about 25,000 persons were also vaccinated at their own expense or gratuitously. It is therefore estimated that at least 150,000, out of a total population estimated at 196,000, have been recently vaccinated.

40. An *Infants' Vaccination Act* was passed on March 24th 1903. This Act contains a liberal "conscientious objection" clause, but the operation of the Act is limited to one year.

A very important defect in this Act, and one that cannot be allowed to go on without protest, is that the principle of lay vaccination, *i.e.*, vaccination by unqualified persons, has been adopted permanently. Under this Act the Boards of Poor Law Guardians in four parishes have appointed unqualified persons, *i.e.*, persons who are not registered medical practitioners, as public vaccinators. This action cannot be too highly condemned, and I desire here to record my official protest against it.

Vaccine Lymph.

41. A regular supply of vaccine lymph presented great difficulties. Glycerinated lymph rapidly becomes inert in tropical temperatures over 70° F., and local experience has demonstrated that lymph imported from England by post or otherwise loses its activity in three weeks from the date of departure, so that it only remains potent for about 10 days after arrival here. At the time of the first outbreak a travelling agent of a well-known firm of manufacturing chemists in the United States, who happened to be in the colony, suggested that lymph could be sent from New York in the cold storage rooms of the steamships that come to this port. He guaranteed that if it were stored on ice on arrival it would remain active for three months. A supply was arranged for under these conditions, and the result amply justified the experiment. Personal experience proved that lymph kept on ice for four months after arrival retained its activity: but under ordinary conditions the three months period (which is noted on each package of ten tubes) was not exceeded.

There was some initial delay in obtaining a sufficient supply early in the epidemic, but the Board of Health arranged for a regular supply by each steamer, varying from 500 to 5,000 tubes according to the demand, and the general standard of the lymph supplied has been excellent.

The total issue during the epidemic was 109,800 tubes at a cost of £1,921 12 5.

The following table gives the numbers vaccinated in each parish to April 12th, 1903.

TABLE I.

Return of Public Vaccinations

PARISH	Estimated Population.	Number of persons vaccinated.	Percentage of vaccinated in total population.
St. Michael	60,517	36,990	61 per cent.
St. Philip	20,113	13,653	67 ..
Christ Church	23,146	13,577	58 ..
St. George	17,248	12,714	73 ..
St. John	11,772	7,945	67 ..
St. Thomas	10,882	6,086	56 ..
St. James	11,271	7,618	67 ..
St. Peter	11,567	6,879	59 ..
St. Lucy	10,486	8,074	76 ..
St. Andrew	9,362	5,740	61 ..
St. Joseph	9,696	5,946	59 ..
Total	196,000	125,222	64 per cent.

Statistics of the Epidemic.

42. The total number of cases observed from February 23rd, 1902 to April 4th 1903 was 1,466, and 119 deaths occurred from the disease. This represents a death-rate of 8.1 per cent. Besides these there were 6 deaths of infants from other causes and several still-births. Most of these cases were treated in the isolation hospitals, but 54 cases were isolated in Bridgetown and St. Michael in 29 private houses, and during the Baywood Village epidemic in St. James large numbers of patients were treated in their own houses because there was no room for them in the hospitals of the parish which were situated in the village. The actual numbers so treated are not recorded.

The following table gives the distribution of the cases. In compiling statistics of the epidemic one has relied on the official register kept by the Clerk of the Board of Health with much care and thoroughness. Without it this report would have been impossible as far as statistics are concerned.

TABLE II.

Small-pox Epidemic in Barbados, 1902-1903.

PARISH.	Treated locally.		Treated at Pelican Island.		Total No. of Cases.	Total No. of Deaths.
	Cases.	Deaths.	Cases.	Deaths.		
<i>First Outbreak.</i>						
St. Michael ... ..	...	...	16	1	16	1
Christ Church ... ..	...	...	1	...	1	...
<i>Second Outbreak.</i>						
St. Michael	*54	7	617	54	671	61
St. Philip	3	...	...	...	3	...
Christ Church	53	6	17	2	70	8
St. George	42	2	27	3	69	5
St. John	13	1	7	...	20	1
St. Thomas	14	...	11	...	25	...
St. James	426	38	6	...	432	38
St. Peter	32	2	8	...	40	2
St. Lucy ... ..	...	...	6	...	6	...
St. Andrew	14	1	...	...	14	1
St. Joseph	96	2	3	...	99	2
Total	747	59	719	60	1,466	119

* These 54 cases were isolated in Bridgetown and St. Michael in 29 private houses.

43. Table III. gives the age incidence of the whole epidemic, or the ages at which cases and deaths occurred, taken in groups. In 10 per cent. of the cases the age is not recorded.

The percentage mortality at the various periods ranges from 52.5 per cent. "under 1 year" to 1.8 per cent. from "5 to 20 years." After "20 years" it rises and declines again, but reaches 28.5 per cent. at "over 60 years." The figures of this group are too small however for an accurate percentage for this period of life (*Vide* foot-note).

It should be noted that the factor of vaccination does not appear in this table, as the records available do not permit of its introduction.

TABLE III.
Age Incidence of Cases and Deaths for the Epidemic.

PERIOD.	Cases.	Deaths.	Percentage Mortality.
Under 1 year	40	21	52.5
1 to 5 years	114	15	13.1
5 to 10 years	161	3	1.8
10 to 20 years	433	8	1.8
20 to 30	297	24	8.0
30 to 40 years	138	22	15.9
40 to 50 years	86	12	13.9
50 to 60 years	17	2	11.7
Over 60 years	* 7	2	28.5
Age not recorded	173	10	5.7
Total	1,466	119	8.1

* Three of the cases "over 60" were 77, 75 and 73 years, respectively, and they all recovered.

44. The two following tables require some explanation. The records as regards vaccinated and unvaccinated persons are not obtainable in complete form for the whole epidemic. With some difficulty a partial list, comprising 801 cases, has been compiled. The cases about which no record of vaccination has been obtained are (1) those of the first outbreak, (2) the first 56 cases of the second outbreak before Dr. Bridger was appointed to the Pelican Island hospital, (3) the cases treated in the parishes of St. James and St. Joseph, and (4) the cases isolated in their homes in Bridgetown and St. Michael.

45. In table IV the incidence of the disease amongst the vaccinated and unvaccinated, respectively, is given. Of 801 cases, 704 were unvaccinated, and 97 vaccinated: of the latter, 23 were vaccinated during the incubation period, i. e. after infection had actually taken place. It is hardly fair to class these amongst the vaccinated, as vaccination during this period is uncertain in its control of the disease.

46. Table V is an important table showing the comparative mortality of the vaccinated and unvaccinated groups, respectively. Like the former table it only relates to 801 cases; but the whole death-rate of this group is 7.1 per cent., which is sufficiently close to the death-rate of the whole epidemic (8.1 per cent.) to allow a fair estimate.

47. The death-rates of the two groups are 7.5 per cent. for the unvaccinated, and 4.1 per cent. for the vaccinated. In the latter however are included 23 persons 'vaccinated during the incubation period,' i. e. 12 days, and one death of a man who was vaccinated four days before the eruption appeared (*vide* Dr. Bridger's report—Appendix IV). Excluding this group of 23 cases and 1 death of those 'vaccinated within the incubation period,' the death-rate of the vaccinated is 4.0 per cent.

48. The death referred to above was that of a sanitary sub-inspector of the parish of St. Michael who neglected vaccination until this late period, although he was employed in disinfecting infected houses.

TABLE IV.

Incidence of Small-pox amongst Vaccinated and Unvaccinated.

WHERE TREATED.	Unvaccinated.	Vaccinated in Childhood.	Vaccinated recently.	Vaccinated in Incubation Period.	Total.
Pelican Island...	547	49	17	17	630
St. Philip ...	3	...	...	...	3
Christ Church...	49	1	...	3	53
St. George ...	35	...	7	...	42
St. John ...	13	...	...	...	13
St. Thomas ...	11	...	...	3	14
St. Peter ...	32	...	...	...	32
St. Andrew ...	14	...	...	...	14
Total ...	704	50	24	23	801

COMPARATIVE MORTALITY.

TABLE V.

Death-rate amongst Vaccinated and Unvaccinated.

WHERE TREATED.	Unvaccinated.		Vaccinated.	
	Cases.	Deaths.	Cases.	Deaths.
Pelican Island ...	547	41	83	4
St. Philip ...	3	0	...	...
Christ Church ...	49	6	4	...
St. George ...	35	2	7	...
St. John ...	13	1	...	...
St. Thomas ...	11	...	3	...
St. Peter ...	32	2	...	...
St. Andrew ...	14	1	...	...
Total ...	704	53 (7.5 p.c.)	*97 (13.8 p.c.)	†4 (4.1 p.c.)

* Including 23 vaccinated during incubation period.
 † Including one vaccinated during incubation period.

Expenditure.

49. The cost of the epidemic was assumed by the central government at an early period, and the total expenditure to July 31st 1903 has been £19,239. 2. 3½, including £683. 11. 2 spent on the first outbreak. The accounts are not quite closed however, and there are some credit balances outstanding from the sale of buildings &c.

Table VI. shows a general summary of expenditure. It will be noted that £2,001 was spent in a bonus of 6d. to each person vaccinated.

Table VII. shows the expenditure in each parish up to May 18th 1903, from which it will be seen that the expenditure bears no apparent relation to the number of cases treated. These sums include buildings, furniture, food, medicine, disinfection, compensation for clothing and bedding destroyed, and the staff expenses, including medical officers, nurses, sanitary inspectors, Sanitary Commissioners and clerks to the Sanitary Commissioners.

In St. Michael, St. Philip and St. Thomas the sanitary commissioners gave their services gratuitously: in the other parishes they were paid.

In St. Michael the clerk to the Sanitary Commissioners also gave his services gratuitously: in the other parishes the clerks were paid for attendance at meetings, and, as parochial treasurers, received in each case a commission on the moneys expended.

50. There can be no doubt that the epidemic would have been more economically administered by a centralisation of the hospitals. Small-pox patients as a rule stand removal very well, and at the termination of the epidemic many cases were brought without risk to themselves for long distances to the Pelican Island hospital. Three

or, at the most, four hospitals conveniently situated would have been ample for the needs of the epidemic. But it was not realized at the beginning how thoroughly vaccination would control the epidemic, and the gigantic task of vaccinating such large numbers was a doubtful problem. It was confidently anticipated that the number of cases would have far exceeded the actual limit reached, and ample provision was thought necessary.

TABLE VI.

Total Expenditure on the Epidemic to July 31st 1903.

	£	s.	d.	£	s.	d.	£	s.	d.
FIRST OUTBREAK ... ..	...	...	...	...	...	...	683	11	2
SECOND OUTBREAK—									
General Expenditure ... ..	...	...	...	11,723	11	10½			
Lymph	1,921	12	5						
Vaccinators	2,842	9	10						
Bonus to persons vaccinated	2,001	0	0						
Notification	66	17	0	6,831	19	3	18,555	11	1½
Total Expenditure to July 31st 1903							£19,239	2	3½

TABLE VII.—SECOND OUTBREAK.

Expenditure in each Parish to May 15th 1903.

PARISH.	Expenditure.	No. of cases treated locally.
St. Michael	1,399 2 9½	* 56
St. Philip	167 8 10	3
Christ Church	‡ 819 8 9½	53
St. George	540 7 10	42
St. John	357 7 11½	13
St. Thomas	248 0 2	14
St. James	768 14 8	426
St. Peter	410 3 11	32
St. Lucy	377 8 0½	0
St. Andrew	376 10 6	14
St. Joseph	920 17 7	96
	6,385 11 1	749

‡ Including cost of large new building not used.

* After Aug. 16th the Board of Health took over Pelican Island hospital.

General Observations.

51. The following general observations suggest themselves.

The experience of the epidemic emphasises the following well-known facts:—

- (1) that no community can neglect vaccination without sooner or later paying the penalty of an epidemic of small-pox;
- (2) that isolation alone cannot be relied on to stamp out small-pox;
- (3) that thorough and efficient vaccination and re-vaccination are necessary to control small-pox.

To banish small-pox entirely, as in Germany of late years, a very complete system of vaccination and re-vaccination, extending over a period of many years, is necessary.

The futility of relying on isolation to stamp out the disease has been well demonstrated here. Every effort was made at the outset and apparently the attempt was successful; but the large number of unvaccinated persons made a recrudescence almost certain. Even in countries where vaccination is more generally practised outbreaks are frequent, owing to the presence of persons inefficiently vaccinated or not re-vaccinated, and for this reason insufficiently protected.

52. At the beginning of the epidemic there was no organisation sufficiently complete to deal with the epidemic, and a working system had to be gradually organised as the epidemic went on. The final result reached after some months was fairly good, but some confusion and uncertainty existed at first, and these opportunist methods are always costly and uncertain. The experience gained has been valuable for future epidemics of small-pox or other infectious diseases, but in the next generation this experience will be forgotten, if it is not put into concrete form in the shape of an improved sanitary organisation.

The present system needs simplification and consolidation with much more complete recognition of the scientific methods of dealing with disease.

53. The need of a government medical officer of health has been seriously felt.

54. The character of the disease during this epidemic has been so mild as to inspire suggestions that it was not small-pox at all, but only chicken-pox or some other eruptive fever known as "Indian pox". The death-rate alone has been sufficiently large to negative this theory, although, as compared with many other small-pox epidemics the death-rate has been unusually small. Further reasons for believing that it was certainly small-pox are (1) that, while the majority of the cases conformed to a mild type, there were many severe confluent and some hæmorrhagic cases, which in every detail presented a typical clinical picture of smallpox, and (2) that, as definitely pointed out by the medical officer of St. Andrew (Appendix XI), these cases of mild type caused severe and typical cases of small-pox in the same houses, when no other infection was possible.

55. Another suggestion offered was that many of the mild cases notified were chicken-pox, while the severe ones were small-pox. If this were so cross-infection would have regularly occurred, as suggested by Dr. Bridger, both types of the disease having been treated together.

One case is recorded by the medical officer of Christ Church (Appendix IV) where apparent cross-infection or re-infection occurred; but the medical officer believes that this woman at first had chicken-pox and was infected with small-pox in hospital. Chicken-pox of definite character and typical symptoms occurred in the colony before, throughout, and after the epidemic of small-pox, and many cases reported as small-pox turned out on medical examination to be chicken-pox.

56. Mild epidemics of small-pox are however nothing new, and are recorded in the eighteenth century in pre-vaccination times. Moreover this epidemic was most definitely an off-shoot of the Canadian epidemic of 1901-1902, which, with its low death-rate of 1.3 per cent, has been characterised by a leading Medical Journal as "a sport of small-pox". The Barbados epidemic was not so mild in character as the Canadian disease. One fact that contributed to this result was that in Barbados the disease found a population largely without vaccination. The vast majority of the cases occurred amongst unvaccinated persons in whom the well-recognised controlling power of vaccination was absent. (For climate as a controlling factor in mitigating small-pox, vide Dr. Bridger's report).

57. The remarkable effect of vaccination in limiting the extension of the disease has been one of the noted features of the epidemic. The outbreak in Baywood Village, St. James, was assuming formidable proportions when general vaccination of the district was started in the middle of September, and the epidemic was all over in a little more than two months from this date, the last case occurring on November 19th.

About 400 cases occurred out of a population of 2,150.

Dr. Archer, the medical officer of St. James, had a terrible experience, and he speaks as one who knows when he gives his positive testimony in favour of vaccination.

In his report (Appendix VIII) and in the reports of Dr. Phillips of Christ Church and of Dr. Skeete of St. Andrew (Appendix IV and XI) many striking examples are given of the power of vaccination, which it is unnecessary to repeat here.

58. Early in the epidemic two remarkable instances occurred. In two unvaccinated households small-pox existed for 12 or 14 days before it was discovered and there was ample time for general infection of other members of these families. The first was the house in which the second case of the first outbreak occurred on Britton's Hill in March 1902, and every one living in the house with the patient—8 persons in all—contracted the disease. The same thing occurred in a family residing in Lake's Folly, Bridgetown, when 10 unvaccinated persons contracted the disease.

It is unnecessary to say more on this point, as the general behaviour of the epidemic speaks for itself.

There has been a severe strain on the resources of the colony at a time of great financial difficulty from other causes, and the 'shot-gun quarantine' of the neighbouring colonies increased the difficulties of the situation. The colony has however emerged from the crisis, and we are not without hope of better things.

JOHN HUTSON, B.A., M.B., C.M.,

Poor Law Inspector,

Barbados.

August 11th 1903.

Appendix I.

REPORT ON THE CONVALESCENT SMALL-POX HOSPITAL DISTRICT "A."

1. Owing to extreme pressure on the accommodation at Pelican Island the Board of Health early in September decided to open a convalescent hospital at the old lunatic asylum, District "A," and at the special request of the Board of Health I took charge of it.

2. As soon as the female wards were repaired and cleaned 20 female convalescents were received from Pelican Island on September 6th, and later on male patients were received when the male wards were ready. On September 11th the Police Hospital, about 100 yards away within the same enclosure, was taken over from the Inspector General of Police, and a large wooden building overlooking the powder magazine was repaired and made ready.

3. The drains gave some trouble, and the main drain of the old lunatic asylum had to be opened up and a large quantity of sewage cleared out. The drainage well also had to be thoroughly cleaned.

4. The buildings mentioned, comprised four large detached wards some distance apart and capable of accommodating 100 patients,

The wards were gradually occupied until on October 1st 70 patients were in residence, and on October 6th the numbers were 87—the highest number reached.

Towards the end of October the pressure on the Pelican Island hospital began to lessen, and it was decided to relieve the St. James hospitals in Baywood Village, so that bad cases in the village under treatment in their own houses might be admitted to the hospitals there.

On October 23rd the first patients were received from St. James, and admissions continued until the epidemic in that parish began to abate.

At the end of November the numbers went down to 42, and as there was now sufficient accommodation at Pelican Island I recommended that the remaining patients should be transferred there. This was done on November 23th and 29th, and the hospital closed.

5. The total number of admissions was 284, from Pelican Island 198, and from St. James 86. The daily average, admissions, and discharges were as follows:—

	Daily Average.	Admissions.	Discharges.
September	37	120	60
October	71	112	97
November	67	52	85

There was a case of still-birth on September 29th at full term, and another woman had an abortion next day. On November 10th a woman from St. James was delivered at full term, and on the 13th (3 days after) the infant was vaccinated in order to save it from an attack of small-pox. The vaccination was successful without any ill effects, the infant did not develop small-pox and was transferred to Pelican Island 15 days after quite well and thriving.

There were a few cases of trivial illness, several feverish attacks without apparent cause, cases of dysentery and diarrhoea, several cases of ulcer of the cornea (eye) more or less severe, many bad cases of ulcer and one of eczema—all sequelæ of small-pox.

One child developed small-pox 3 days after admission. It had not been vaccinated, and had been sent to Pelican Island with its mother who was ill. It went through a moderately severe attack and recovered.

THE STAFF.

6. The staff was gradually increased and finally consisted of a steward, S. B. Goddard, who did excellent work, a matron or house-keeper, 9 nurses (including 2 night nurses), two cooks, two scrubbers, five laundry women (one for the staff who worked separately), two porters, and a messenger. The caretaker of the buildings acted as gate-keeper and took charge of the clothing sent in for the patients to wear on their discharge from the institution. The whole staff worked well and was in every way satisfactory. Owing to the fact that they had all been recently and efficiently vaccinated no case of small-pox occurred.

7. The clothing department presented some difficulties. The first patients from Pelican Island had no clothing of their own, as it had been destroyed on admission, and these patients had to be fitted out with clothes, as nearly as possible the same they had on admission, but of new materials. This kept the steward and contractors very busy for a time and constant supervision was needed. These difficulties did not decrease, and it was found easier to allow the patients to send home for a clean suit of clothes, and pay them the value of the clothes that had been destroyed on the basis of the price we should have paid the contractors. This worked well and gave general satisfaction. After this only patients who had no other clothes at their homes were furnished with new clothes.

Later on the destruction of clothes at Pelican Island was abandoned, and the garments worn to hospital were washed and disinfected, and sent up to us to await the discharge of the owners.

8. The patients were on the whole orderly and well-behaved, but some resented their detention in quarantine and were inclined to be rebellious. They developed enormous appetites, especially those from St. James, and the diet-scale, at first modelled according to the one in use at Pelican Island hospital, was on two occasions increased in quantity. Books and games of various kinds were provided for the men and boys, needlework and books for the women. These they much appreciated.

9. Of 284 admissions, 236 were un-vaccinated (including 5 whose vaccinations had not "taken,") and 48 had been vaccinated. Of these more than half (28) had been vaccinated during the incubation or invasion periods, *i.e.*, from one day to two weeks before the rash appeared, one had been vaccinated "about three weeks" before the rash appeared, 4 had been vaccinated, but no further record was made, and 15 had been vaccinated in childhood. Of these 15 who were vaccinated in childhood or early life, 3 had two marks visible, 3 had one mark, and 5 had no marks, but they were positive they had been vaccinated: of the other four there is no record about the condition of vaccination marks. The ages of the 15 vaccinated in childhood or early life at the time of the illness were as follows:—

From 22 to 30	...	5
.. 30 to 40	...	3
.. 40 to 50	...	4
.. 50 to 60	...	3

It will be noted that in the cases of those vaccinated in early life, although in most of them the vaccination was not efficient (in some too few marks, in others none), no one was affected before the age of 22.

The following gives the results in tabular form:—

INCIDENCE AMONGST VACCINATED AND UNVACCINATED.

Unvaccinated (5 unsuccessful.)	Vaccinated in childhood.	Vaccinated (no record of time.)	Vaccinated recently.	Vaccinated in Incubation Period.
236	15	4	1	28

The cost of feeding, inclusive of staff, amounted to about 3½d. per day.

JOHN HUTSON,
Poor Law Inspector.

Appendix Ia.

Circular.

Barbados,
April 25th, 1903.

Sir,

His Excellency the Governor has requested me to prepare a report of the smallpox epidemic; and with a view of making it as complete as possible it is desirable that reports from the parochial medical officer should supplement this report.

Under these circumstances I have the honour to request that your board will be good enough to obtain from the medical officer of your parish a report of the local outbreak, as soon as in the judgment of the medical officer it is quite at an end, and there is no likelihood of its recurrence.

It will be convenient if the report includes a reference to the following matters:—

- (1) the manner of introduction into the parish.
- (2) the working of the Vaccination Acts.
- (3) the effect of vaccination in controlling the epidemic, or otherwise, with details of any striking instances.
- (4) the statement of any unusual cases that have occurred.

I trust that your board will be able to secure the co-operation of your medical officer in this matter.

I have the honour to be,

Sir,

Your obedient servant,

JOHN HUTSON,
Poor Law Inspector.

The Chairman
of the Poor Law Guardians.

Appendix II.

ST. MICHAEL.

REPORT OF SMALLPOX EPIDEMIC.

District No. 2.

On July 13th 1902, I was called to Matilda King residing in Cat's Castle by an order of the local inspector of poor, and after observing her for several days and taking other medical men to see the case I notified it as a case of small-pox, and she was sent to Pelican Island while I was asked by the Chairman of the sanitary board to attend her there along with some contacts that were sent along with her, all of whom developed small-pox.

Some weeks before this case I attended two children in St. Mary's Home who I suspected at the time had small-pox but was advised to make no fuss over the cases. By my after experience I am quite certain that they had small-pox.

In a house opposite to the Home I found two persons who had quite recovered from small-pox and had the marks plainly visible over their bodies and they informed me that a woman suffered the same way before they were taken sick. By their evidence I am convinced that the first epidemic which occurred earlier in the year and was supposed to have been exterminated was not so really, but that cases of small-pox were occurring all the time between the supposed end of the first epidemic and the beginning of the second. I have no doubt that the small-pox was introduced into this Island by the case of Miller who landed here with the disease on him.

As regards vaccination I cannot say that I saw any evidence of its preventing the disease. Vaccinated cases usually had the disease mildly but I also saw several cases who were unvaccinated have the disease very mildly also. I am a believer in the efficacy of vaccination and was very disappointed at not being able to verify for myself the efficacy of it in preventing and modifying the disease of small-pox. During the five weeks that I had charge of Pelican Island I saw some very bad cases of smallpox. Confluent and hæmorrhagic cases occurred, and some very mild.

The worst cases occurred during this period, and the nurses have informed me that these first cases were much worse than those that came after I left. Several bad cases recovered due to the excellent nursing that they got. The arrangements for reporting cases in the parish and sending as soon as possible to Pelican Island were good, and except when there was no room at Pelican Island no delay in getting them there occurred.

Some cases I know were hidden away and went through the disease without being sent to Pelican Island. Towards the end of the epidemic the parochial medical officers were called to all cases of sickness by a special lot of inspectors appointed by the Board of Health, and a reward was offered to anyone reporting a case of small-pox.

On the whole I think that the management of the epidemic in this parish was highly creditable to all concerned.

T. SINCLAIR BROWNE,

Parochial Medical Officer,

District No. 2, St. Michael.

Appendix III.

PARISH OF ST. PHILIP,

7th May, 1903.

EDWARD BLADES Esq.,
Chairman Board of Guardians,
St. Philip.

Sir,

In reply to your request for the information asked for by the Poor Law Inspector in his circular dated 25th April 1903, I beg to say that I have already reported to your board on the subject in my Sanitary Reports for 3rd and 4th quarters 1902. These have been read as usual, I presume, by the Poor Law Inspector, and are still open to his inspection.

I have nothing to add to these reports under heads I, III, and IV.

With regard to the information asked for under head II as to "the working of the Vaccination Acts," I may say that,

1. Vaccination Act 1902 requiring all persons except paupers to pay for their vaccination did not "work" at all.
2. Vaccination Amendment Act 1902 which gave free vaccination to every body "worked" excellently, and in one week from 14th to 20th September I vaccinated no less than 1,433 persons.
3. Vaccination Further Amendment Act 1902 with its sixpenny "bribe" was distinctly immoral, and "worked," or caused to be "worked," a lot of villainy and deception.

I have good reason to believe that many persons were vaccinated again and again under this act, defrauding the revenue and inflating the number of those returned and accepted by the public as successfully vaccinated.

4. The "working of the fourth, and up to now last, Vaccination Act, which provided for the vaccination of infants, is still in the womb of the future.

I have the honour to be,
Sir,
Your obedient servant,

C. E. GOODING,
Med. Officer, St. Philip.

Extracts from the Sanitary Reports for the 3rd and 4th quarters of 1902, referred to by the Medical Officer in the above report.

September 30th 1902.

So far we have escaped lightly from small-pox, on having had three cases which have been isolated at the small-pox hospital at Bayley's school. The first case was a man named John Thorne who came from town to Clifden, and the other two were contacts from him.

December 31st, 1902.

We have not added in this parish to the three cases of small-pox noted in my last report, and after these recovered and were sent out the small-pox hospital was closed.

Early in November soon after the closing of our small-pox hospital, on my return home late one night, I found a case of small-pox in my yard, which had been sent to this parish for treatment by the inspector of poor of St. John's. The man came from Hother-sal plantation, and had walked the whole way in charge of a constable. He was in the eruptive stage of the disease. It being impossible to get him to Pelican Island hospital at that time of night, and our hospital being closed, I sent him back in a truck to the inspector of poor of St. John's, pointing out the serious risk of infection to which the public on the highways had been exposed, and the danger to a sick man in walking such a distance; and I advised that he should be allowed to sleep that night in the already infected house from which he came, and the case dealt with in the morning. I subsequently heard that the man was sent to Pelican Island.]

Appendix IV.

REPORT ON THE EPIDEMIC OF SMALL-POX IN CHRIST CHURCH, 1902-03.

Cases of small-pox occurred in the following nine localities:—

1. Parish land, near Providence.
2. Thornbury Hill.
3. Gibbon's, Hill and bogs.
4. Warners.
5. Maxwell's Hill.
6. Welches.
7. St. David's.
8. Kingsland.
9. Hopewell.

The first was discovered in Robert Ashby's house in the Parish land on August 19th 1902. The patient was his daughter Dorothy, and she contracted the disease in Bridgetown, where she went every day in the pursuit of her calling. This case had been concealed for about three weeks, and was only discovered when other inmates of the house sickened. Six members of the household contracted the disease and two houses near by were infected from this one.

A single case occurred in Green's and four in Taylor's. We were at first unprepared with hospital accommodation. Ashby's house was therefore placed in strict quarantine and kept so until the last case in it was cured. The case in Green's house being a grandson of Ashby's was transferred to his house and kept there with the other six. Three from Taylor's house were sent to Kingsland and the fourth to Pelican Island.

The first case on Thornbury Hill was a daughter of Robert Ashby, and she was probably infected whilst visiting her sister. She had two children who were at once vaccinated. In a week they both developed a very mild rash but never "laid up." The neighbour who kindly took them in when their mother was sent to the hospital was vaccinated the same day. She had two grown-up children who declined the operation. The mother escaped infection. In due course her children contracted the disease severely; the boy's became confluent, and he died at Kingsland.

There seems to have been no connection between these cases and those that occurred

later on near by on Gibbon's Hill and in the bogs. There were nine in number and can all be traced to a girl who contracted the disease in town where she was in service. As in Ashby's so here, the first case was concealed and only discovered when others sickened.

Two cases occurred at St. David's. The first, a man who died at Kingsland was infected in town. The other, a neighbour, probably took it from him.

More houses were infected in the area to the north of Warners than elsewhere, 16 cases occurring here. These were all traced to a young man named Green who contracted the disease in town, concealed it at home, and had actually returned to town to work before it was discovered. He gave it to, amongst others, his brother who lived on Maxwell's hill and in this way was responsible for twenty-eight cases, amongst whom three deaths occurred.

On Maxwell's hill two houses were infected. One of these was occupied by Green's brother, his mother-in-law and her children. The other house was obliquely opposite. From these two came twelve cases.

The case from Welches was the constable who had been placed in charge of one of the houses on Maxwell's hill until its inmates could be dealt with. Presumably he caught the infection there.

Three cases occurred in the immediate neighbourhood of Kingsland hospital, where one was certainly, and the other two probably, infected.

Nine cases occurred behind Hopewell. The first of this series was a girl who if she had small-pox at all probably took it in town. I sent her to Pelican Island whence she was discharged in a very short time. A fortnight after her discharge she again sickened and had to be sent back, this time with undoubted small-pox.

In the meantime she had given the disease to others. I shall always be doubtful whether she had smallpox originally, or only chicken-pox. Dr. Bridger assured me that in his opinion her first attack was mild small-pox, and of course I thought the same when I sent her to Pelican Island. But the subsequent attack coming on so soon after the first—at the end of the incubation period from the date of her exposure to infection in the hospital—and the fact that there have undoubtedly been cases of chicken-pox in the parish since, make me incline to the view that she had really chicken-pox on the first occasion.

The last case in the parish appeared on March 15th, and curiously enough was within about $\frac{1}{2}$ mile from where the first was found in Ashby's House.

Directly the disease was known to be in the parish the Sanitary Board met and converted Kingsland boys' and girls' schools into an isolation hospital. An adjacent house on the same pasture was rented to make quarters for the nurses and servants. A kitchen was erected, as well as a house for the ambulance which had been bought and fitted up, and another house which contained a room for the watchman and one for the doctor to wash and change in. Water was turned on from the main, and a comfortable bathroom built.

The hospital which was conveniently situated in the middle of the parish and near to me was furnished with canvas cots and answered its purpose very well. In a comparatively short time it was fully occupied, and the Board acting on the instructions of the Board of Health erected close by a large and commodious building to accommodate fresh cases. We were less than a fortnight in building this, but happily the epidemic began just then to lull; room was found at Pelican Island for all the later cases, and the building which has since been lent to the Agricultural Department, remained unoccupied and uninfected.

The hospital was placed under the charge of the assistant nurse from the almshouse, and she was helped by women engaged locally. Her work was very well done. That many of the cases were severe may be judged from the fact that we had six deaths, three adults and three children. Of these, four were confluent, one had hæmorrhage from the bowels and the last was an infant who died more from exhaustion from an attack of vomiting and diarrhœa than from small-pox which it had rather mildly.

We found the best local application to be a mixture of creolin in castor oil. This was soothing, antiseptic, and kept the flies away better than anything else.

Our housekeeping arrangements were equally simple and satisfactory—We kept no stores at all. There chanced to be an excellent shop just opposite, and the nurse was given *carte blanche* to take from it every day what she required, subject only to the condition that I approved what she ordered, and that the cost per head was not to exceed a certain amount. The result was a much more varied diet than we could possibly have allowed for on a diet table, and the patients were correspondingly gratified. Sea eggs, fresh fish and cakes appeared on the menu occasionally. The patients were pleased and we were saved the nuisance of keeping and checking stores. The shopkeeper was our storekeeper, and saved us the cost of freight; the pass-book which I checked every day, the only book we had to keep.

Our sanitary arrangements were primitive but efficient. A small pit was dug every day and into this the disinfected slops were emptied. It was filled up with earth in the morning and a new one brought into use. There was never the slightest disagreeable smell or other unpleasantness in connection with these pits. The bath water ran into a sack dug to receive it.

The attendants were all vaccinated, and none contracted small-pox.

As soon as the epidemic appeared I vaccinated as many people as I could with the limited supply of lymph obtainable. Later on this work was energetically taken in hand by nearly forty public vaccinators. Included in this number, were all the schoolmasters of the parish, save one who did not care to undertake the work.

I specially recommended the masters because of their influence with the people, and also because I thought they should be given a chance to make up for the loss they were bound to suffer through the epidemic.

The parish was divided into four districts, each under the immediate care of a sub-inspector, and these with the constant supervision of our active and efficient inspector saw that the sanitary condition of the parish was maintained at a high level.

Directly a case was discovered it was removed, the other inmates vaccinated, when they would consent, and the house and its contents disinfected with Jeyes fluid and white lime.

But for the energetic way in which these measures were carried out, and the fact that the majority of the people of the most susceptible ages were by degrees vaccinated we should have been very hard hit. Nine different localities were infected but the disease never got out of hand once, and it was successfully stamped out of each before it had a chance to spread very far.

I am fully satisfied as a result of my observation during this epidemic of the great value of vaccination as a prophylactic. Perhaps three of the most striking instances of its use that I could mention are those quoted in the P.L. Inspector's last half yearly report from one of my last year's quarterly reports, which I enclose.

Two cases, and as it turned out, severe cases were admitted into the * Fort before the eruption appeared. Directly a diagnosis could be made they were transferred to Kingsland. Happily none of the inmates, all of whom had been vaccinated, contracted the disease.

The above touches briefly everything of importance that occurs to me in connection with the recent epidemic.

J. R. PHILLIPS.

June 22, 1903.

Table of cases discovered in Christ Church showing the number treated respectively at Kingsland, Pelican Island, isolated at home, and those discovered too late to be dealt with.

Parish land.	Kingsland.	Pelican.	Isolated.	Discovered late.
Parish land	4	2	7	...
Gibbon's	9	...	...	...
Thornbury Hill	5	...	...	...
Kingsland	3	...	...	...
St. David's	1	1	...	...
Warners	10	3	...	3
Maxwells	10	2	...	1
Welches	1	...	...	...
Hopewell	...	9	...	...
	43	17	7	4

The following is the extract from the Poor Law Inspector's report referred to :—

CHRIST CHURCH.

REPORT OF MEDICAL OFFICER OF CHRIST CHURCH FOR THE QUARTER, ENDING SEPTEMBER 30TH 1902.

The sanitary condition of the parish is excellent. There have been no cases of smallpox for several weeks. I attribute this to the fact that a long way over half of the people in the parish have been vaccinated, so that more than every other person in it may be reckoned immune. As to the value of vaccination in protecting against small-pox I will mention these cases that seem to be very striking and to the point.

The first case reported in the parish was that of a girl called Ashby who had had it about three weeks when it was discovered. She was isolated at home with the other members of her household, which comprised ten persons all told. Of these six—herself included had small-pox before the quarantine was raised. None of these had been vaccinated. Neither of the other four contracted the disease. One of them had had small-pox

* The Parish Almshouse.

during the last epidemic in 1860, and the other three had been vaccinated some years before.

Amongst those who lived near this house was a man named Taylor who refused to be, or to allow his family to be vaccinated. In a few weeks his eldest daughter contracted the disease and was sent to Kingsland. The others again refused vaccination. A fortnight or so later, a younger child sickened and was sent to Kingsland. This time Taylor allowed himself and a boy to be vaccinated, but his wife refused for herself and her infant. A fortnight later the infant was taken, and being sent to Pelican Island died there. The boy who had been vaccinated escaped, the mother who was nursing the infant, but who had been vaccinated years ago, escaped, and the father whose vaccination was not successful, but who had had small-pox as a boy, also escaped. So that here again we have a household, those of whom had been all protected by vaccination or a previous attack of small-pox, escaping whilst all of those not similarly protected were infected, and one died.

A tinsmith by the name of Browne occupied a very small house on Kingsland pasture near the small-pox hospital. The house consists of a single room, a large part of which was occupied by the bedstead. Mrs. Browne had been recently confined, and her house was occupied by her husband, a child of three years, her infant and herself. Her husband had been recently, and she had some years before been vaccinated. The elder child contracted small-pox, whereupon the mother and infant of ten days was promptly vaccinated. The father was requested to leave the premises, which he willingly did, and the mother and infant were left in the house and in the same bed with the three year old case of small-pox. The latter passed through the usual stages of a moderately severe attack and recovered. The mother and infant (in both of whom the vaccination took splendidly) escaped unscathed. Nobody could be more exposed to the risk of an attack than those two; and although I suppose there will be found some people who see nothing more striking in any of the cases I have mentioned than a strong coincidence, I must say that they confirm very fully the belief I had always held in the efficacy of vaccination as a protection against small-pox.

I have the honour to be,

Sir,

Your obedient servant,

J. R. PHILLIPS.

Appendix V.

TO THE CHAIRMAN AND MEMBERS OF THE SANITARY BOARD, ST. GEORGE.

Gentlemen,

In accordance with your request, and for the information of the Poor Law Inspector, I beg to submit the following particulars with regard to the special incidence of the recent small-pox epidemic in this parish.

The parish of St. George it will be noted is not only midland but much more of a thoroughfare than any other parish in the island, and therefore especially exposed to infection, which not only walked across it, but was carried across it in ambulances, and literally encircled it. The task therefore of keeping out and controlling such an infectious disease amongst a population of 18,000, the bulk of whom were, from the commencement of the epidemic until almost the middle of January 1903, obstinately opposed to vaccination on so-called religious grounds, was a very serious one.

At first my instructions were to isolate infected houses and to vaccinate immediate contacts, but finding these half measures inadequate, and that the real danger arose from want of authority to control contagious contacts, on the 24th January 1903, when a serious recrudescence of the disease seemed imminent, I on my own personal responsibility gave instructions to Mr. Sanitary Inspector Hnsbands to quarantine these contacts in their houses until they submitted to vaccination.

In every instance they quickly consented with the exception of one very obstinate and recalcitrant family whom I quarantined in their house for several days.

At the same time I interviewed the President of the General Board of Health, Dr. W. K. Chandler, C.M.G. then also acting Colonial Secretary, and received from him further instructions to spare no expense in dealing with infected houses, disinfecting material, etc. I will add that these measures were generally approved, and afterwards confirmed by law.

In one district—Bourne Tenantry and Cole Hole—very populous, I met with serious opposition, but it quickly vanished, and very amicably too, in the presence of two or three Police constables.

The net result of these measures was that every contact, with the exception above noted, was promptly vaccinated, infected material burnt, houses fumigated, and immediately after soused with strong Jeyes' lotion, and lime-washed throughout with a strong mixture of lime and Jeyes'.

Had it not been for such prompt measures our thickly peopled and at that time

unvaccinated villages, would certainly have become hopelessly infected; moreover when the people understood that the authorities would leave no stone unturned to stamp out the disease, vaccination proceeded swiftly. The bulk of the vaccination in this parish was performed after January 1903.

The first case of small-pox occurred in the thickly populated Airy Hill village on the 3rd September 1902.

The patient Marian L. Watson was isolated in the house until the 13th when she was removed to St. Helen's hospital and the house fumigated, bedding etc. burnt, and contacts vaccinated. On the 17th September, the case of MacDonald Burrows occurred in the same house and removed, and house again fumigated.

The villagers were vaccinated by myself immediately and no other case occurred in the district.

Soon after at Toppin's village, St. Michael's border, 4 cases occurred in one house—contacts vaccinated, and no spread to other houses. The same thing occurred on the Christ Church border—one case and no more. At Bourne's tenantry one case Javan Hunte—an unvaccinated carpenter employed at Pelican Island—and no more: also at Sweet Bottom border of St. Joseph, and the Cole Hole border of St. Michael the disease was in each district, confined to the two houses infected.

The most persistent infection was carried to Drax Hall tenantry by Richard Ifill from St. Michael's. Case reported on the 11th September 1902, and removed to St. Helen's hospital on 13th when opened.

House closely quarantined in meantime, and contacts vaccinated.

From Drax Hall tenantry there is a continuous connection of houses in every direction with very populous tenancies and villages, and every case of suspicious variolous eruption had to be very carefully dealt with and isolated.

The St. Helen's hospital opened on 13th September 1902—was closed 31st December 1902. There were 43 admissions with 2 deaths. The incidence of this disease was heaviest in the months of September and October 1902, respectively, 13+18 cases=31 total of the severer cases—the remaining 12 occurring in November and December being mostly of the very mild type known as varioloid.

After closure of the St. Helen's hospital all cases were sent to Pelican Island. 24 were sent down.

The parish was then apparently free, until 17th January 1903, when I discovered the four King cases of typical variola at Good Intent; so typical as to incline me to believe that it was a fresh infection. James King had been engaged in selling sugar in Bridgetown, and at that time Trinidad was not yet quarantined. He was an active anti-vaccinist.

These cases were immediately reported by myself personally to Mr. Sanitary Inspector and were removed early next morning under police escort to Pelican Island, and the disease spread no further, but was strictly confined to the houses of the immediate contacts, as follows:—

		{ James T. King, Good Intent.
17. 1. 03		{ Edna King,
		{ Estelle King,
		{ Isaline King,
21-1-03.	William Cobham, (engaged to one of the daughters)	Workmans.
25-1-03.	Robert McKenzie Richards, (apprentice)	Jericho.
1-2-03.	Martha Coppin, (sister of James T. King)	Good Intent.
5-2-03.	Christian Cook,	} These 3 in William Cobham's house.
5-2-03.	Clarke-Holman Barker,	
6-2-03.	Lilian Cobham,	

This outbreak never spread beyond these persons, or their houses, thus proving that isolation was effective and that the "70 contacts" were a fabrication.

In this emergency St. Helen's hospital was re-opened for detention of contacts, with two good results:—spread of infection checked, and vaccination promoted.

Good Intent was the head-centre of the anti-vaccinists in this parish: it was here that the Rev. Dr. Taylor (public vaccinator) was mobbed and threatened and forced to seek police protection: and vaccination marks were called the "marks of the beast," but when it was found that the chief opponents were punished with worse marks, the opposition broke down, and vaccination proceeded swiftly and smoothly throughout the parish.

After this outbreak the epidemic quickly died away in varioloid or variolous eruptions, all of which were sent promptly to Pelican Island, and their contacts isolated at St. Helen's, houses fumigated and lime-washed, infected material burnt, clothes boiled, etc. Every possible measure as before until the disease was finally stamped out.

The potency of vaccination to control and to prevent small-pox has been well exemplified in this epidemic; and even in those exposed persons in whom vaccinia was concurrent with variola, as for instance in the boy Macdonald Burrows, who was for many days a contact of Marian Watson of Airy Hill, there was a decided modification.

In varioloid this modification is absolute, the disease although still infectious is

robbed of all its terrors, and becomes so mild and changed in appearance, that in this form alone the term varioloid varicella becomes intelligible.

The anti-vaccinists have tried to make capital out of these varioloid cases; the fallacy consists in confining the comparison to cases of small-pox occurring among the "vaccinated" and the "unvaccinated". In such statistics the factor of control is of course left entirely out of consideration.

Power to control,—partial protection—implies the possession of a future power up to perfect protection, and the real comparison to be of any statistical value must be made between these two sets of cases in which vaccinia has conferred either "partial" or "absolute" protection. As a matter of fact varioloids are but a very small percentage of the entire vaccinated. Varioloid is thus really objective evidence of the controlling influence of vaccinia, an influence that has not only modified the disease in the individual, but also tempered its epidemic virulence, thus leading to the safe conclusion that a systematically vaccinated population has little to fear.

11-6-03.

G. O'DONNELL WALTON,
Medical Officer, St. George.

N.B.—I cannot close this brief account without expressing my appreciation of the zeal and energy displayed by Mr. Sanitary Inspector Husbands, who night and day was always at his post and ready for duty.

Sub-Inspector Charles Yard, superintended the sanitary operations carefully and faithfully.
G. O'D. W.

Appendix VI.

ST. JOHN'S.
June 1903.

TO THE CHAIRMAN AND GENTLEMEN OF THE BOARD OF GUARDIANS.

Sir,

I have the honour to forward the Board my report on the epidemic of small-pox that occurred in St. John's parish between the months of July and December 1902.

The first case of small-pox occurred at Henley plantation on the 5th of August. A coloured boy by the name of Charles Padmore, brought the small-pox from Bridgetown, there were then other cases in the same tenantry: Rosetta King, Fitz Clarke and Joseph Clarke all in the same house; no other case occurred in the house that Joseph Padmore was carried to from Bridgetown.

The cases that occurred in Small Town were traced to have been brought from Bridgetown by Archie Gittens, who infected Ruth Simpson, and John Gittens; Ruth Simpson was in the last month of pregnancy, she died after being prematurely delivered.

Drax Hall cases were traced to have been brought from St. Joseph, by Joshua Nurse, who gave it to Ethel Nurse, Jane Nurse and Joseph Nurse all in same house.

The Cherry Grove cases started with Beatrice Baneroft, who infected Louisa Small, and Joanna Mayers. No source could be found for the infection of Beatrice Baneroft.

James Toppin, Kendal, who infected Ernest Collins, John Waterman and Joseph Walton, was traced to have contracted the disease in Bridgetown.

Herman Jordan, Edey's Village, no trace of infection could be found.

In no case was it traced to have spread from house to house.

Questions—1. Answered in above notes.

2. 1st Act, was unworkable, there was no response to the invitation to be vaccinated.

2nd Act, under which a number of lay vaccinators were appointed, to be paid a fee of sixpence each, was more effective.

3rd Act, in which the people were paid to be vaccinated, resulted in the great mass of them coming forward.

3. There is no doubt that vaccination controlled the epidemic. In many instances, there were very bad ulcers, but that was greatly due to want of proper cleanliness.

4. I noticed in several cases that a rash came out after vaccination and in a few, difficult to cure.

I have the honour to be,

Sir,

Your obedient servant,

H. C. GREAVES,
Par. Med. Officer.

Appendix VII.

ST. THOMAS.

THE CHAIRMAN AND MEMBERS OF THE BOARD OF GUARDIANS.

Gentlemen,

I submit for your consideration some remarks on the late outbreak of small-pox in this parish, that occurred between August 25th and November 12th 1902.

The number of cases notified by me in this district was 24, of these 11 were treated locally and 13 were sent to Pelican Island. I append a memo from the Sanitary Inspector stating the names, age, and date of occurrence of the individual cases, their locality, source of infection and place of treatment. Of the 11 cases treated locally 4, Orlando Gibson, Elizabeth Alleyne, Frances Rouse and Alberta Rouse were of the confluent type and more or less severe and 7 of the discrete, and milder.

It is to be noted that,

1. Even in these few cases infection took place at all ages.
2. The cases cropped up in all parts of the parish.
3. The source of infection in every case was either St. Michael or St. James. Vide memo.
4. There did not occur a single case of infection, traceable to any contact, after disinfection of the infected house, and, as far as possible, those in it.

The method of procedure after the notification of a case of small-pox was, I presume, similar to what took place in other parishes viz., the removal of the patient, disinfection of the house and everything in it, and vaccination of all contacts who were kept under observation for a few days.

Many were opposed to vaccination in this parish. It quired tact and perseverance on the part of the vaccinators to persuade the people to adopt what they considered a grievance. Considering the fact that vaccination does make many persons ill, we can sympathise with the labouring men and women in their objecting to lose their wages for a week or two. Such a grievance however is no argument against the utility of vaccination, a precaution, held by the highest authorities to be preventive generally, if not universally.

I have the honour to be,
Your obedient servant,

C. A. YEARWOOD.

MEMO: FOR DR. YEARWOOD IN *re* SMALLPOX.

- August 25th. Orlando Gibson, Redman's Village, treated locally, child ten years. Went with his grandmother to St. James and visited an infected house.
- September 2th. Bertha Gibson, child 2 years, Redman's Village.
Ernest Gibson, " 5 " " " } treated locally.
Clarence Gibson " 7 " " " }
Elizabeth Alleyne adult " " }
The Gibsons resided with their brother Orlando after the house was isolated.
Alleyne slept in this house with Orlando for the 3 nights prior to his being discovered ill with small-pox.
- September 19th. Rosa Haynes, young adult. Arch Hall. Sent to Pelican Island. Came to this parish from Pelican Island St. Michael a few days before the eruption appeared.
- September 21st. Frances Rouse, Jackson's } treated locally.
Alberta Rouse " }
adults (mother and daughter) Frances had visited a house at Lear's Gap, St. Michael, which was infected.
- September 29th. Howard Smith, child 7 years. Rock Hall } treated locally.
Ivy Smith " 9 " " " }
The father of these children was employed to watch infected houses in St. Michael, his dirty clothes were found at the house where they had been brought to be washed.
- October 1st. Justine E. Boyce, child 2-3 years, Porey Spring, treated locally. Came from St. James the same day she was discovered with smallpox.
- October 2nd. Eunice Carrington, child 1 year. Rock Hall, treated locally.
A cousin to Howard Smith who used to visit Eunice and used to mind her.
- October 2nd. Leon A. King, young adult, Fisher Pond, sent to Pelican Island.
Was employed at Pelican Island hospital as a carpenter and returned to the parish 3 days before he was discovered.
- October 18th. Elizabeth Farnum, adult, Hilloby, sent to Pelican Island.
Was in the habit of visiting a house at Taitt's, St. James, where there were 2 cases of small-pox.

October 27th. Netta Phillips, Arch Hall, sent to Pelican Island.
 Dorothy Phillips, (mother and daughter) Arch Hall, sent to Pelican Island.
 These had visited and slept at a house at Endeavor, St. James, where a case of small-pox was.

November 2nd. Louisa Parris, 19 years, Chapmans Village. }
 Walter Parris, 18 years, " " }
 George Parris, 16 years, " " }
 Queen A. Parris, 45 years " " } All sent to Pelican
 Janetta Parris, 2 years " " } Island.
 Rosetta Parris, 3 months " " }
 Ada Parris, 7 years " " }

These all resided in one house, another inmate had been in the habit of visiting a man ill with small-pox in St. James.

November 12th. Rosa Parris, 15 years. Chapmans Village, sent to Pelican Island.
 Lived in the house with the 7 others, and was ailing when they were carried away, the eruption did not appear until several days after.

J. CLEMENTS PAYNE,
 Sanitary Inspector, St. Thomas.

Appendix VIII

REPORT OF THE SMALLPOX EPIDEMIC IN THE PARISH OF ST. JAMES, AUGUST TO NOVEMBER 1902.

1. The disease was introduced into this parish by Jos. W. Searles, a clerk in the employ of Skeete & Co., Roebuck, Street, Bridgetown. On July 26th he came home to his father, who keeps a small shop in the Baywood. He was taken ill that day and remained with his father until I discovered him on the night of the 8th of August. The room in which I first saw him was next the shop and communicated with it by a door, in this way the people who came to the shop were exposed to infection. Thirty-five people caught the smallpox from him, and these were scattered about the district in twenty-four different houses.

The Baywood district consists of a closely packed cluster of ten villages situated on the hills below Apes' Hill plantation. It has a population of about 2,200, very few of which had ever been vaccinated. With twenty-four centres of infection in this district and no vaccine lymph to be had at that time, the disease spread rapidly.

2. On September 1st two school houses were taken over and converted into hospitals and later on an adjoining building was rented. These hospitals could only accommodate between sixty and seventy patients, the other cases were treated at their own homes which were quarantined.

3. About the middle of September a supply of lymph arrived, lay vaccinators were appointed and the epidemic was soon under control, the last case being reported on November 19th. The number of cases reported each month were August 35, September 226, October 156, and November 21, making a total of 438 cases.

4. Eleven other districts became infected, seven of which were infected from St. Michael, and four from Baywood. In these districts the disease never spread beyond the houses in which it first appeared. This was due (1) to the thorough house-to-house inspection which caused the early discovery of the cases, (2) to the prompt removal of the sick to hospital, and (3) to the thorough way in which the surrounding people were vaccinated.

5. Out of the 438 cases treated 33 died, giving a death-rate of about 8.6 per cent. The deaths were greatest amongst children under five years of age, and next greatest among adults over thirty years. Seventy cases occurred in children under five years, and of these twenty-one died, giving a death-rate of 30 per cent. Sixty-four cases with 13 deaths occurred in people over thirty years, giving a death-rate of about 1.3 per cent.

6. Within a year four Vaccination Acts have been passed: this goes to show that the first three Acts were faulty. The fourth Act has not (in this parish) begun to work yet and will I think require some amending.

7. Without vaccination the epidemic in this parish would have continued until everybody had suffered from small-pox. The value of vaccination is shown by the following:—(1) about forty people were employed as nurses, attendants etc., all of these except three (two watchmen and a messenger) were successfully vaccinated. None of those who were vaccinated suffered from small-pox, but the three who were not vaccinated had small-pox and one died. (2) The son of J. S. developed small-pox. His house with all the inmates, some twelve in number, was quarantined. All the inmates suffered from small-pox except J. S. who had been vaccinated some years before, and one son who was vaccinated the day before the house was quarantined. (3) S. M. would not be vaccinated.

His wife and children were successfully vaccinated. S. M. developed small-pox and along with his family was quarantined in his house. He died of the disease but his wife and children remained healthy. (4) P. C. lived in a house with her mother and three children. She developed small-pox, the mother and children were vaccinated and they all "took" except one child, this child developed small-pox. (5) Seven cases of small-pox were found in two houses at Martin's village. The people in the village were called out and seventy were at once vaccinated, only three cases occurred outside of the first two houses, and all these were people who did not get vaccinated. About fifty persons were vaccinated during the incubation period of small-pox, all of these had the disease mildly, the rash drying up in a few days and not going on to maturation.

8. Taken as a whole the epidemic was fairly mild, but there were very many severe cases, two hæmorrhagic cases died almost as soon as the rash appeared.

L. T. F. ARCHER, M.B.,
Parochial Medical Officer,
St. James.

June 18, 1903.

Appendix IX.

ST. PETER.

Towards the end of August and the early part of September 1902 the parish of St. Peter was invaded by the epidemic of small-pox almost simultaneously in four districts apart from each other, viz., Speightstown, St. Nicholas, Mile and a Quarter, and Six Men's village. The disease was introduced into Speightstown from the dispested village of Baywood in the adjacent parish of St. James. The other places were infected from Bridgetown. At the time of the invasion, the supply of vaccine lymph from the Board of Health failed, and the only measures available for combating the epidemic were isolation of persons who had the disease, at a hospital, disinfection of the houses where the disease occurred, and attention to sanitation. After a time vaccine lymph was procured and vaccination proceeded with, which I have no doubt proved of value in support of the other measures adopted to deal with the epidemic.

These measures seem to have been effective as there occurred in Speightstown and environment, with a crowded population of about 3,000 inhabitants fourteen cases: at St. Nicholas, ten cases; at Mile and Quarter five cases; at Six Men's, eight cases; and in a total population of the parish of St. Peter of over 10,000 persons, thirty-seven cases. The disease was observed to exhibit varying degrees of severity, ranging from a comparatively mild complaint, to one of such severity as to place the patient at the point of death, which point two passed.

All that I know of working of the Vaccination Acts is that I vaccinated over eight hundred persons who presented themselves, and desired to be vaccinated, and that I have not received one penny from the Colonial Treasury for such vaccinations, as I made no charge for them.

The only incident worth recording, occurred in the case of a child about one and a half years old who was with its mother when she was discovered affected by the disease. The child was vaccinated and sent along with the mother to the isolation hospital, where it remained in an atmosphere of small-pox for several weeks. The vaccination proved successful, and the child escaped having small-pox.

C. C. GREENIDGE,
Medical Officer, St. Peter.

Appendix X.

REPORT ON THE SMALLPOX EPIDEMIC OF THE YEAR 1902—03, PARISH OF ST. LUCY.

1. A report on the smallpox epidemic in this parish need only be brief for the simple reason that the cases which occurred here were both mild in type, few in number, and were all discovered at an early stage of the disease and at once sent away for treatment.

2. This parish was the last in the island to be infected, and as infection took place when the disease was on the decline elsewhere, there was ample room at Pelican Island for our few cases, which were accordingly taken there for treatment, although a fully equipped isolation hospital had been provided at Durham to meet the possible requirements of the epidemic. This arrangement was economical, and under the circumstances, certainly worked well, but its success would as certainly have been problematical had the cases dealt with been more numerous, or more severe, or discovered at a later stage of the disease.

3. The Sanitary Board profiting perhaps by the sad experience of some other less fortunate boards, took every advantage of the time given them by the epidemic to put the parish in the best possible sanitary condition, and to this fact and to their untiring energy and promptness in dealing with the cases that occurred, is due, in great measure, our fortunate escape from further infection.

4. Our first case occurred on October 20th 1902, at Crab Hill Village, perhaps the most thickly populated locality in the parish, and the patient by name, Rebecca Griffith, was at once sent to Pelican Island and recovered. This woman had been a prisoner at Glendairy some 2 or 3 weeks before, and had come home *via* St. Michael and St. James, both of which parishes were at this time badly infected.

On October 24th a second case occurred at Hannay's. This man by name Daniel James Springer, was also sent to Pelican Island and recovered. Just about this time a third case was found at Chequer Hall. This patient, a woman, had wandered into this parish from Baywood, St. James. She was promptly taken charge of by a rural constable and taken to the Police Station at "E," and thence to the isolation hospital in St. Peter, where she was admitted and died of the disease. No further cases occurred until March 15th 1903, when a woman named Elizabeth Bowen, Avistown Village, who had lately come from the Church Village, Bridgetown, was reported and sent to Pelican Island. On March 29th 3 suspected cases were found at Alleynedale—these were all doubtful cases, and were not certified as small-pox, but were sent on to Pelican Island as suspects, after consultation with the Chairman of the Board of Health.

The total number of our cases was therefore only (6) six, of which 3 or 4 were suspects only, and were taken in hand as a matter of precaution, and for the general good.

5. It was practically impossible to trace the source of infection in any one of these cases, and speculation thereon is idle, as the infection was so wide-spread, and the intercourse between this parish and the infected districts elsewhere so constant and intimate, that one is led to wonder at our long and marvellous escape, rather than at our final and moderate infection at the end of the general epidemic.

6. The measures used to prevent the spread of the disease from these cases, which occurred at five (5) distinct points in the parish about 2 miles apart from one another, were such as are now recommended by the most modern authorities on this subject, and the results obtained were uniformly gratifying, no case of secondary infection from a first case having occurred in the parish.

This is but another proof, if such were needed, that this disease, like all others, is amenable to proper sanitary control; and a knowledge of this fact, and a belief in it, certainly tended to give us confidence in applying the recognised measures to check and stamp out our small local outbreak of this disease.

7. All the Vaccination Acts had serious defects—the result probably of hasty and panic legislation—and the last Act, though passed in calmer mood, is no exception in this respect. The effect of them, the whole, is probably beneficial, and due allowance must be made for the haste in which they were passed, and the gravity of the crisis which called them into existence.

8. In the absence of any reliable statistics it is impossible to form any just estimate of the effect of vaccination in controlling the epidemic locally, but judging from the fact that none of the numerous contacts, who were all promptly and successfully vaccinated, contracted the disease it is perhaps fair to assume that their escape was probably due to the well-known protective effects of vaccination in such cases.

9. It may be as well to mention here that for upwards of 18 months (last past) there has been an epidemic of chicken-pox in this parish. May not the inclusion of some of these severer cases of chicken-pox among the small-pox cases have further tended to diminish the mortality of what has certainly been a comparatively mild epidemic of small-pox? This certainly, to one who is wise after the event, seems both probable and excusable, and may in part account for the low death-rate of the recent epidemic.

10. The Sanitary Board of this parish and its officers have certainly done good work for this parish and island in connection with this epidemic, and have once more proved the capacity, and amply justified the existence of our local Institutions.

HALLAM MASSIAH, M.A., M.D., C.M.,

Parochial Medical Officer, St. Lucy.

Appendix XI.

REPORT CONCERNING CASES OF SMALL-POX OCCURRING IN ST. ANDREW'S PARISH DURING THE EPIDEMIC 1902.

THE MEMBERS OF THE BOARD OF GUARDIANS.

Gentlemen,

I have the honour to submit the following report concerning the cases of small-pox which came under my care in this parish during the late epidemic. There were 14 in

number and resulted in 13 recoveries and 1 death. The following facts indicate the manner of introduction with the localities first invaded.—

The disease first appeared at the Spring estate, in a young boy about 14 years age, and although simulating a very mild type, this case victimised 9 others,—5 of whom occupied the same residence with the boy, and 4 in two neighbouring houses. No information could be obtained as to how this boy became infected. These cases were all isolated and treated at their homes on the spot.

The second appearance disclosed itself at Walker's where a man had returned home after having slept in the same room with a small-pox patient near Nicholas Abbey. This resulted in the infection of an old woman, who had refused to be vaccinated and who eventually died of the disease. To this house also another patient returned, having already contracted the disease in another district.

The third and last outbreak showed itself at Indian Ground, near Mount Prospect, the patient being a young woman who had also been infected in a neighbouring parish.

These last 4 patients were removed and treated at the local hospital at Belle Plain.

The further spread of the disease I regard as being undoubtedly arrested by the following timely precautions:—

1. Prompt isolation in secluded districts of infected houses with their inmates.
2. Early vaccination round the localities of invasion.
3. The advantages of an excellently well appointed emergency hospital for general use.
4. Careful disinfection of released houses and their inmates, with a final white-washing of the houses.

In conjunction with the above great service was rendered by a system of careful supervision and inspection throughout the parish. This was maintained by a staff of sub-inspectors under the direction of the sanitary inspector.

Rewards were offered to persons who reported cases of concealment of the disease.

Regarding the effects of general vaccination I am unable to speak with definite precision but the following facts are significant.

1. All the cases of smallpox under my care had never been vaccinated in their knowledge.
2. No recently vaccinated cases were known to contract the disease.
3. Many recently vaccinated cases were in constant contact with the disease—such include nurses, domestic servants and porters for removing reported cases to hospital—all of whom escaped infection.
4. In my own case after 4 careful attempts at vaccination, with no sign of active results, and being in constant communication and contact with the patients for about 3 months I remained uninfected.

On the other hand strong evidence in favour of vaccination is exhibited in the instances detailed below of special cases, occurring in houses under isolation:—

1. At the Spring in one house, were 8 inmates—one, a boy, contracted the disease, his mother and a young brother, aged 8, were at once vaccinated successfully—the remaining 5 members were not vaccinated and all 5 became infected, the mother who had the whole burden of nursing and arduous attendance from 6 to 7 weeks on the 6 patients as also the young boy who ate, drank and slept with them, both remained uninfected.

2. A contact with her 3-months old baby from another house at the Spring escaped isolation and was discovered 6 days afterwards at Turners Hall—both were at once vaccinated but 4 days after vaccination symptoms of the disease appeared in the mother and rapidly developed into a severe type—although the vaccination at the same time apparently assumed a normal course in both cases—for two days they remained in this house isolated with 6 other inmates, who were all vaccinated and all of whom remained uninfected. The mother and baby were returned to their isolated home at the Spring, where the disease prostrated the mother for weeks while the baby who had suckled its mother while the pox was appearing remained free of the disease.

3. At Walkers 5 people were isolated in one house; 2 having the disease at the outset—of the other 3, one had been a victim of the disease on a prior occasion, one, an old woman who refused to be vaccinated, and the 3rd a little girl who was vaccinated, aged 8. The old woman contracted the disease, which unfortunately proved fatal, while the little girl, although sleeping in the same bed with one of the patients, remained uninfected, as also did the woman who had previously suffered from the disease.

My information concerning the operating of the Vaccination Acts is too insufficient to enable me to report thereon.

Viewing the epidemic from a medical standpoint, I regard the disease as being an anomalous form of smallpox; differing from the ordinary form as follows:—

1. That the large majority of serious cases, such as may be termed of the confluent type of the disease, were not fatal, as is the rule.
2. That the eruption in very nearly all cases was superficial, and consequently caused comparatively little "pitting."
3. That there was a considerable proportion of very mild cases, with profuse eruption but accompanied by more or less insignificant symptoms.

An interesting point is noticeable regarding the great diversity in intensity of symptoms among cases isolated in one house, presumably infected from one source, and that being of a very mild form--such an instance was well demonstrated in an isolated house at the Spring. The initial case was an extremely mild one--five contacts contracted the disease and may be designated shortly as follows :—

2 very mild.

1 bad.

2 very severe.

One of the latter recovered with defective articulation.

This fact may obviate the necessity for enunciating the presence of two distinct diseases, which has been suggested, viz., very severe symptoms as true small-pox, and those with mild symptoms as an undescribed disease, but not small-pox.

In conclusion we may deem ourselves in this parish as being very fortunate in being so lightly touched by the epidemic, considering the proportions it assumed in two adjoining parishes, and the fact that we possess the Railway terminus in our midst.

Having visited our Island with so severe an ordeal may the tide of events turn to prosperous avenues, and bring favouring gales for future success.

I have the honour to be, gentlemen,

Your obedient servant,

Baxter's House,
27th June 1903.

E. M. SKEETF, M.B., C.M.,
Parochial Medical Officer.

Appendix XII.

INDUSTRY,
St. Joseph, 3rd July, 1903.

Chairman Board of Guardians, St. Joseph.

Sir,—I have the honour to submit my report on the small-pox epidemic 1902—03.

The first case that occurred in St. Joseph's was that of a woman named Delcina Gambal, who came from Bridgetown July 13th 1902. She was reported as being ill, and seen the same evening, and sent to Pelican Island the next day as suffering from small-pox. It was ascertained that during the short time she had been in the parish, twenty-six persons had come in contact with her. These were placed in quarantine as contacts, and two of them developed the disease, and were sent to Pelican Island. By this time the Health Commissioners of St. Joseph's were instructed to equip their own hospital, which they did, and a nurse from the almshouse developed the disease, and was sent to it, the local inspector of poor had already developed it, in a very mild form on the 13th day after he visited the woman Gambal. This nurse evidently contracted the disease from him, as there was no history of her being in contact with any other case of small-pox, and the peculiarity of these cases was that the inspector was the mildest, and the nurse one of the most severe cases we had.

We were again infected from Bridgetown by a man named Todd, who was discovered on August 26th in his house in a dying condition. He was removed to the hospital and died soon after admittance. Then cases began rapidly to pour in, and it was found that a larger hospital had to be built. The Commissioners of St. Joseph's secured the services of Mr. R. Emtage, who rapidly erected a very fine hospital, which gave complete satisfaction. The services of a competent matron were secured, and in all 100 cases were treated, 2 of whom died. The last case was admitted on November 14th, 1902. The hospital was shut down on the 31st December 1902, two cases only remaining for one week longer as they were too weak to be removed.

In regard to the medical aspect of the disease, it is certain that (judging by this epidemic) that smallpox in the tropics is not the terrible disease that one is taught to believe it is, and that the ill-effects of the epidemic were principally artificial ones built up by ourselves, viz., the misery caused by the system of quarantine as practised in the West Indies, a system that was not efficacious in keeping the disease from spreading from one West Indian island to another, but was certainly responsible for most of the expense and misery caused by the epidemic.

In regard to the question of vaccination, for me to say anything in its praise or to adduce fresh proofs of its efficacy, would be indulging in the useless work of "painting the lily and gilding the gold."

In conclusion I would like to place on record how the Rev. F. Manning, Vicar of St. Ann's, in whose district our hospital was, visited most constantly, and administered to the inmates. My thanks are also due to the ladies and gentlemen who sent fruit, flowers, books and pictures to the hospital.

I have the honour to be,

Sir,

Your obedient servant,

EUSTACE GREAVES.

Appendix XIII.

MEMORANDUM *RE* SMALL-POX BY HIS EXCELLENCY THE GOVERNOR

To the President of the Board of Health :

EPIDEMIC OF SMALL-POX.

The epidemic of small-pox which, it must be recorded with regret, has now taken a firm hold upon the population, and which if it is to be subdued must be combated with vigour, has brought to light the fact (1) that the responsibility of those entrusted with the work of dealing with epidemics is not clearly understood, and (2) that the system provided is open to some objections. It is desirable in the interests of the Island, the trade and commerce of which will be very seriously affected if the epidemic is prolonged, to make the responsibility of all persons as clear as possible, and if serious difficulties in the work of administration present themselves to sweep them away.

2. The steps for dealing with epidemics are defined by the Public Health Act, No. 3 of 1898, and the Rules and Regulations framed under sections 4, 8 and 12 of that Act.

3. In the parish of St. Michael which includes Bridgetown, the Highway Commissioners for the City of Bridgetown are by law the Commissioners of Health for the parish [section 10 (2)]. The Public Health Act authorises the Commissioners of Health to appoint Sanitary Inspectors (section 11), and it gives them also manifold powers (sections 15—18), all pointing to them as the responsible authorities in their respective parishes. Further, under section 13 they are required to see not only that the Bye-Laws made by them are duly observed but also the Rules and Regulations made by the Board of Health. This is very important to note, because it shows clearly that it was the intention of the Legislature that the authority of the Commissioners of Health in their respective parishes should not be superseded or overruled by that of the Board of Health.

4. Now with regard to the "prevention of spreading of diseases," The Public Health Act clearly lays down (section 23) that notice of a case of small-pox shall be given, not to the Board of Health, but to the Commissioners of Health through their officers the Sanitary Inspectors, or if needs be the Medical Practitioner attending the case. (It may be here remarked that the heads of families of the poorer classes do not, on account of the expense, often call in a medical practitioner and do not under the circumstances know that the case is an infectious case; but that does not alter the fact that it was evidently the intention of the Legislature to keep the responsibility in the hands of the Parochial Commissioners of Health).

5. The Commissioners of Health have to undertake the work of disinfecting houses, bedding, &c., and to defray the cost out of parochial funds placed at their disposal (sections 25-29).

6. It is clear, therefore, that as the law stands at present, the Commissioners of Health of the several parishes are bound by law to carry out certain well defined duties in connection with the present epidemic of small-pox, and that any action on the part of the Government taken with a view to relieve the taxpayers of parishes from the burden of the cost of dealing with it, does not in any way in itself relieve them of the responsibilities which the Public Health Act imposes upon them. I want this point to be quite clear, so that the Commissioners of Health may not erroneously assume that any part of the duties which the Act places upon them can be transferred to the shoulders of the Central Board of Health.

7. Before I proceed to deal with the incidence of the cost of tackling the epidemic, I will refer to the position of the Board of Health. The Board of Health is to consist of nine members, of whom two are to be members of the Legislative Council and three members of the House of Assembly (section 2). They have power to make Rules and Regulations with regard to contagious, infectious and other diseases, which are to be applicable to the whole Island (section 4) : they can institute enquiry into the health of the Island (section 5) : they can if necessary establish dispensaries in such localities as they may deem expedient upon the outbreak of cholera, small-pox, or yellow fever (section 6) : and they have other powers (sections 7 to 9). Now it is important to notice that with regard to the exercise of the powers conferred by sections 7, 8 and 9 the Board of Health is not authorised to act excepting through the parochial Commissioners of Health. It is again clear therefore that the Legislature requires the Commissioners of Health to be the responsible parties in the case of epidemics in their respective parishes.

8. Let me refer to the present epidemic and to the action of the Government with respect to it. At the outset I counselled the Board of Health to place Pelican Island with its buildings at the disposal of the Commissioners of Health for the parish of St. Michael, because there is no better spot in the whole island for use as a place for the isolation and treatment of infectious diseases than Pelican Island. Pelican Island, it must be remembered, is not under the supervision and in the hands of the Board of

Health. It is the Quarantine Station of the Island, that is to say, the Station set apart for the reception of persons coming into the Island either suffering from infectious diseases or arriving from places where such diseases exist; and it is by law in the hands of the Quarantine Board. The members of the Quarantine Board are also by law the members of the Board of Health (section 4 Quarantine Act, No. 31 of 1896); but the two must not be confused. From the 13th July Pelican Island was handed over to the Commissioners of Health of the parish of St. Michael, and for the arrangements there, and for the treatment of the patients and the disposal of the dead, the Commissioners of Health are responsible and no one else.

9. As soon as it became clear to me that the epidemic was not likely to be stemmed, as on the previous occasion, by the simple process of isolation, and that only a wholesale system of vaccination of the people would be effective, I consulted on the 23th of July the President of the Board of Health and the Poor Law Inspector, and with their acquiescence decided to ask the Executive Committee to move the Legislature to give a preliminary vote of £500, so that steps might be taken to relieve the taxpayers of the parish of St. Michael of the expenditure necessary for dealing with the epidemic, and to throw the burden upon the whole community. I stated that in my judgment the responsibility of the management of the small-pox hospital, in fact, of Pelican Island itself, should be taken back from the Commissioners of Health of the parish of St. Michael and placed in the hands of the Board of Health. This was agreed to, and the money was voted. It became necessary to find an experienced medical officer to assume charge of the Hospital and of the "Contact" station, and to act as Medical adviser to the Board. The post was offered to many local medical practitioners whose terms proved unacceptable, and at last the services of Dr. Bridger, who was doing duty with the Troops in Antigua were secured. He takes up his duties on the 18th August, and from that date the responsibility of the Commissioners of Health of the parish of St. Michael, so far as the custody and treatment of patients at Pelican Island are concerned, ceases.

10. What the Legislature has sanctioned is this, that the expenses in connection with the work of combating the epidemic shall fall upon the general revenue. It has not sanctioned any diminution of the responsibility resting upon the Commissioners of Health in parishes. This can be done only by an amendment of the existing law. Commissioners of Health are still required, in the interest of the general community, to discover cases of smallpox through their Sanitary Inspectors or through their Medical Officers, and to deal with them as the law allows. They have to decide whether isolation on the premises is possible or whether the case should be sent to the smallpox hospital, and in the event of obstruction it is their duty, without fear or favour, to see that for the general good of the community the law is not defied and their powers derided. They have to arrange for the conveyance of cases from the houses to the beach where the cases are handed over to the Hospital Authorities working under the Medical Officer in charge of Pelican Island, and they have to undertake the disinfection of houses and the guarding of houses in cases in which isolation in them is permitted. If, in connexion with this work, the Commissioners of Health find it necessary to employ an additional Medical Officer or additional Sanitary Inspectors, or to incur any extra expense, the amount of such additional expenditure would, if properly certified and shown to be necessary, naturally fall as a charge upon the money placed by the Legislature in the hands of the Board of Health, but the responsibility for making complete arrangements within their own parishes rests entirely by law with the Commissioners of Health.

11. The Board of Health is responsible from the 18th August for dealing with the cases sent to them from parishes for their conveyance by boat to Pelican Island, and for the burial of those who may there unhappily fall victims to the disease. Above all they are responsible for seeing that proper arrangements are made for the care and treatment of such patients, for the proper expenditure of all sums voted by the Legislature and placed in their hands for the purpose of breaking down the epidemic, for promulgating such directions to persons upon matters in respect of the disease as may from time to time appear necessary, and for seeing that every possible step in the way of vaccination and so forth is taken, and taken promptly. Further it is their duty to take notice of any dereliction of duty or failure on the part of any parochial Commissioners of Health to carry out their responsibilities.

12. The principal objection to the present system is duality of control, but as the law stands, (and an amendment of the law may not be considered desirable), this cannot be avoided. There will be very little harm done if every authority recognises that he has a part to play and plays it with energy and with the thought that what he does is for the general good of the community. Minor difficulties are the large number of members (5) required to form a quorum at meetings of the Board of Health, and the decision come to in the House of Assembly that every item of expenditure must be passed at a meeting of the Board. Expenditure is at times urgent, and in dealing with an epidemic expedition is everything. It would have been better to have trusted the President of the Board, as in the case of Heads of Government Departments, and to have left it to the Auditor General to query expenditure where necessary.

13. I was glad to learn that the Board of Health does not intend to continue the

objectionable practice of burying at sea the bodies of those who succumb to the disease. A site for a cemetery having been selected, the cemetery should be brought into use as soon as possible, bodies being interred as elsewhere with the burial service read over them.

14. A Bill to amend the Vaccination Act will shortly be presented to the House of Assembly which will have for its object the removal of the fee of sixpence for vaccination. It is proposed to throw the cost upon general revenue, and to arrange for the vaccination free of cost of all persons of the labouring classes, of domestic servants, and in fact of all who in these hard times find it difficult to make the necessary payment. Should the Legislature pass the Bill it is to be hoped that all persons will take early advantage of the measure and by vaccination assist in the work of suppressing the epidemic.

15. I have written this Minute so that all who have to deal with the epidemic may see more clearly on what lines its suppression has to be worked, and in the hope that all will assist by subordinating personal feeling to the general good in the work of stamping out the disease in this island.

F. M. HODGSON,
Governor.

Government House,
16th August, 1902.

Appendix XIV.

MINUTE BY HIS EXCELLENCY THE GOVERNOR.

THE SMALL-POX EPIDEMIC.

The trouble experienced on the 25th August by the Commissioners of Health of the Parish of St. Michael in obtaining a prompt obedience to the law in the case of a small-pox patient at Tweedside leads me to think that there is some misunderstanding on the part of many people as to the state of things now existing in the Island, and as to the law with regard to small-pox cases, which a few words from me may smooth away.

2. I want it to be recognised that the present small-pox epidemic has obtained a firm hold. It cannot be put an end to entirely by isolation as on the last occasion. Other measures are necessary. So long as small-pox remains among us so long will the trade and commerce of the island suffer and people will be thrown out of employment. Already the stevedores, the labourers whom they employ, and also the boatmen, have realized what it is to have the port of Bridgetown quarantined. Their work and the money they earn by their work have been seriously curtailed. Every person in the colony will suffer in a more or less degree if the epidemic is allowed to last. It is therefore necessary for every one to do his or her share to put an end to it.

3. It is now placed within the power of everyone to be vaccinated. I will not argue here as regards the use of vaccination excepting to say that vaccinated persons are far less liable to get small-pox than those who are unvaccinated, and that if after vaccination they should get the disease they will have it in a mild form. Universal vaccination is the only means by which the people of Barbados can now stamp out the epidemic. Let that be clearly understood.

4. Then let me counsel all to avoid concealment of cases. Concealment means not only risk of life to the patient but the spread of disease amongst those live with or are neighbours of the patient. It is unfair to everyone.

5. Opposition to removal to the hospital should be avoided. It brings serious trouble to all concerned. The law allows removal and to oppose those whose duty it is to carry out the law means the punishment of the law-breakers. We should all work together for the common good, and strive to carry out the arrangements which have been determined upon for breaking down this terrible epidemic.

6. It may be asked why should people be taken away from their houses to a Small-pox Hospital. The answer is firstly to prevent the spread of the disease among those who live near, secondly because in a hospital there are all the means of treating those who are sick, and thirdly if everyone were left in their houses the Doctors could not possibly find time to visit and treat all the cases.

7. Let me add that the patients in the Hospital at Pelican Island are well and carefully treated and are comfortable. I have myself been to Pelican Island, have visited all the wards, and asked the patients then in them to tell me if they had any complaints to make. They had none. I speak on this matter with actual personal knowledge.

F. M. HODGSON,
Governor.

Government House,
2nd September, 1902.

Appendix XV.

GOVERNMENT NOTICE.

COLONIAL SECRETARY'S OFFICE,
4th November, 1902.

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The following copy of a Minute from the Governor to the Colonial Secretary forwarding to the General Board of Health the Report by the Poor Law Inspector on the Smallpox Epidemic in St. James, is published for general information.

By Command.

W. K. CHANDLER,
Colonial Secretary, Acting.

Copy.

THE COLONIAL SECRETARY.

This report should, I think, be brought before the Board of Health. The two principal features of it are (a) the initial supineness of the Parochial Authorities in dealing with the epidemic, and (b) the danger to the whole community from the misguided action of certain persons who, on so-called religious grounds, refuse to be vaccinated.

2. As regards the first point, it still appears that the hospital accommodation in the parish is imperfect, and that no effort is being made to augment it. At the present moment there is room for all fresh cases in the Pelican Island Hospital and it may on the whole be preferable, in order to avoid the expense of taking and fitting up additional buildings, to have all such cases sent to that hospital for treatment. But the Board of Health should, I think, give this matter their very careful consideration and see that the necessary action is taken one way or the other without delay.

3. With regard to the religious question, it is clear that the persons referred to by Dr. Hutson—and I understand that they are not by any means confined to the Parish of St. James—form a real danger to the community, inasmuch as they act as feeders to the epidemic and so prolong the period of its existence, and add to the serious losses which Barbados is incurring commercially and will incur until smallpox is stamped out.

4. A general system of compulsory vaccination of adults is probably not likely to find favour, but the trade of the Colony ought not to be brought low in order to avoid interference with the conscientious scruples of religious fanatics who have little or no stake in it, and who would be the first to demand relief if they were thrown out of employment. Some remedy is necessary. I suggest for consideration that power being given to parochial authorities by legislation to approach the Governor-in-Executive Committee through the Board of Health for an order, upon good reason shown, declaring a particular part of a parish an area infected with smallpox, and that, in the event of the order being issued, all persons within the defined boundaries of that area should be vaccinated under a fixed but non-accumulative penalty. This arrangement would get rid of danger spots without harassing persons living in uninfected districts, and would be the means of quickly stamping out any outbreak of smallpox. Something of this nature should be done, and done quickly, for the longer the disease is allowed to linger with us the more difficult will it become to get back the Royal Mail Company's transshipping arrangements.

5. I do not suggest that the arrangements now put forward should supplant the proposed measure to provide for the compulsory vaccination of infants and juveniles, but that it should supplement it. If action is taken along both lines the Legislature will have done all it reasonably can do to stamp out the present epidemic, and to avoid future epidemics.

(Sgd.) F. M. HODGSON.

27th October, 1902.

BARBADOS.

Special Report of the Smallpox Epidemic in the Parish of St. James by the Poor Law Inspector, October, 1902.

The Hon. W. K. CHANDLER, C.M.G., LL.D.,
Colonial Secretary, Acting.

SIR,

I have the honour to forward the following report on the epidemic of smallpox in the parish of St. James, in accordance with instructions received from His Excellency the Governor.

For the purposes of this report I have visited the infected district to make myself

more familiar with its topography, and at the same time arranged with the vaccinator of the district to obtain for me an accurate census of houses and residents in the district. Further, I have arranged two meetings with various parochial officials at which statements were made by them and enquiries by myself, the results of which appear in the copies of evidence attached herewith. The Minute Book of the Sanitary Commissioners was also examined and much of the evidence given by the Acting Chairman is taken direct from the minutes. A tabulated statement of the census referred to is also included in the course of the report.

The situation on October 18th was, that a total of 358 cases had been notified, of which 333 were confined to the Baywood district and 25 had arisen in 10 separate places in the parish. Of the latter, none had occurred in more than two houses in each place, and in no instance had any epidemic occurred.

The infected district is situated in the highland district of the parish of St. James, midway between Lancaster and Ape's Hill plantations, and about 10 miles from Bridgetown. It consists of a group of 11 villages and estate tenancies lying close together, and forming a small country town of 2,150 inhabitants. It is composed of small peasant houses with a few larger houses of petty tradesmen and three schoolhouses. At one end of the town are the works of Endeavour Plantation. In the centre is Baywood Village, and round about it are grouped Deane's Village, Water Hall tenantry, Ape's Hill tenantry, Gilkes Village, Wapping Village, Rat Hall Village, Endeavour tenantry, Lancaster tenantry, Gregg Farm tenantry, and Orange Hill Village. Most of the houses are surrounded by orchards and vegetable gardens, and there is a general air of prosperity about the town. Roughly speaking, the area of the township is about one-half a square mile.

A rough sketch map of the district is attached, which gives a general idea of the topography, and shows the position of the hospitals, and Searles' shop the centre, of infection.

The following is the census made by Mr. Holder, the Schoolmaster of Baywood Primary School, and the public vaccinator of the district:—

October 15th, 1902.

Number of HOUSES and PERSONS in BAYWOOD VILLAGE, &c., &c.

Village or Tenantry.	No. of Houses.	No. of Inhabitants.
1. Deane's Village	31	153
2. Water Hall Tenantry	15	88
3. Ape's Hill Tenantry	56	295
4. Baywood Village	43	205
5. Gilkes' Village	48	221
6. Wapping Village	67	303
7. Rat Hall Village	9	66
8. Endeavour Tenantry	47	251
9. Lancaster Tenantry	10	55
10. Gregg Farm Tenantry... ..	37	159
11. Orange Hill Village	69	311
Three Hospitals:		
Attendants		10
Sick		62
Total	432	2,179

Excluding the sick and attendants not belonging to the district, the population of this infected district is about 2,150 persons.

ORIGIN OF THE EPIDEMIC.

On the evening of August 8th, the parochial medical officer, Dr. Leonard Archer received a letter from an estate manager, living in the neighbourhood of Baywood Village, informing him that it was reported that a case of small-pox existed at Searles' shop in that village. The medical officer at once visited Searles' house, and found one of his sons Joseph W. Searles, suffering from small-pox. The boy's father declared that it was not small-pox, but a rash he suffered from yearly. Many people had been in contact with him, and one woman wanting to show her disbelief in the small-pox theory, rubbed her hands over the boy's face, and rubbed them over her own. It is satisfactory to note that this woman had the disease in due course.

To satisfy the boy's father Dr. Archer called Dr. Bannister, who had been appointed by the Board of Health as consultant, and he confirmed the diagnosis next morning.

The Sanitary Commissioners held a meeting the same day, at which it was decided to quarantine the house, as it was not thought advisable to remove the case. A watchman was put in charge, and the patient and all contacts were regularly isolated according to law. As the case of the boy Searles had existed for 13 days before it was discovered, it

was evident that many people had already been infected, as his father had the principal shop in the village, and people had been freely admitted to see him during his illness. The boy had been infected in Bridgetown, where he was a clerk at Skeete's store in Roebuck Street, and had been apparently in contact with a servant in the lodging house above, who was suffering from the disease, and was at the house for a short time—13 days before.

At the time this first case occurred the school-houses at Prospect and St. Alban's, which are on the lower main road at the south and north borders of the parish respectively, had been appointed by the Board of Health on application of the Sanitary Commissioners as hospitals for small-pox patients, according to law. The Sanitary Board thought it unwise, however, to remove cases from an infected district to a part of the parish that was free from the disease; but they undoubtedly were mistaken in not applying for the schools in the infected district at once.

The Board also decided at the meeting already referred to (on August 9th), that the father of the boy should be prosecuted for concealing the case.

Nothing further was done at this stage, and the next meeting of the Sanitary Board was held on August 18th (nine days after) in consequence of a report from the medical officer that eight more cases had occurred—seven in the infected house, and one in the next house, a niece of Searles. This house was also isolated along with the first.

It is recorded on the minutes of this meeting that the Board decided that the quarantine was of no use, as it in no way prevented the spread of small-pox, and gave directions to the Clerk to write to the Board of Health to enquire if there was any objection to abolishing it in this parish. This decision was premature, as the new cases were evidently the result of the first case, and the persons must have been infected before the house was isolated; and even after isolation of the house the people in the house must have been just as liable to infection.

The Board also sent a request to the Governor through the Colonial Secretary for free vaccination of labourers, artisans, and servants. Further, the Board of Health was asked to receive cases at Pelican Island, but this request was declined on the ground that there was no room. Up to this time no attempt had been made to arrange for a hospital.

On August 21st a sub-inspector was appointed for the district with orders to hunt up cases of small-pox, and to see that the watchmen were doing their duty.

The next meeting was held on August 25th, when it was stated that seven more cases had occurred, one more in Searles' house, and the other six in six different houses.

The Board at last appears to have realised that a hospital must be provided and decided to apply to the Board of Health for the two schools in Baywood Village. But even at this time no steps were taken to fit up the schools for the purpose. The order of the Governor-in-Executive Committee was issued on the 28th of August, authorising the use of the schools. Up to this time 16 cases had occurred in eight different houses, and all these houses had been isolated and kept under control according to law.

On August 28th, however, 18 more cases were discovered, making a total of 34 in all. Next morning the Board held another meeting, but only appointed a committee to interview the Colonial Secretary. This interview, which took place the same day, is described as follows in the minutes of the Board of Health for September 1st:

"The President stated that on Friday last the Rector, Churchwarden and Parochial Medical Officer of St. James had waited on him as Colonial Secretary, and pointed out that small-pox was now epidemic in that parish; that no steps had been or were being taken to cope with the disease beyond attempting to isolate each patient on his own premises, [the persons which had in many instances been found to have neglected their duties] (*sic*); that although school buildings had, at the request of the Health Commissioners been appointed by this Board to be used as hospitals, no attempt had been made to fit them up or use them, as the Commissioners before doing so desired to know who would furnish the money for the purpose. He (the President) had pointed out to the three gentlemen that it was the duty of the Health Commissioners to do everything necessary to stamp out the disease and to call on their Vestry under section 14 of the Health Act to provide the requisite funds, and that all moneys properly spent would be repaid from the public treasury."

The Acting Chairman (the Churchwarden) in his account of this interview says that the Colonial Secretary "recommended that the cases should be removed to the school-houses."

HOSPITAL ARRANGEMENTS.

The local Board had now lost 20 days since the beginning of the epidemic, and the disease was well established in the district. There were at this time no less than 34 cases scattered about in various parts of the villages.

On this day (August 29th) the members of the deputation that waited on the Colonial Secretary appear to have realised that the situation was serious, and they lost no time in starting preparations for the necessary hospitals. The materials for making canvas cots were at once obtained in Bridgetown, and the following morning carpenters were set to work energetically, and went on day and night until a sufficient number of cots were completed.

On the morning of Monday, September 1st, another meeting of the local Board was held at which it was formally decided to start the hospitals without delay; and on the same day a case was admitted from another district of the parish. Next day 15 patients were admitted from the Baywood district, and after that date the hospitals rapidly filled up with new cases until the limit of accommodation was reached, viz. 52 cases. A house near the primary school was hired as an annexe, so that along with the infant school in another part of the village, three hospitals were at work.

After this the schools in the lower part of the parish, which had previously been appointed by the Board of Health at the suggestion of the local Board, were also fitted up, in consequence of an order made by the Board of Health to that effect, and were ready for occupation by September 18th.

By September 8th the hospitals in the infected district were full, and on that date the local Board applied for the schools at Orange Hill village (part of the infected district), and at Greenwich, which is near by. This shows that the Board felt that more hospital accommodation was needed.

These places were never used, and the reasons given by the Acting Chairman are that (1) a communication was received from the Board of Health about this time to the effect that it was not desirable to continue the use of any more schools in the parish for small-pox purposes, and asking (or suggesting) that some other buildings be obtained for the purpose, *e.g.* the Almshouse of the parish; and (2) because the schools at Orange Hill and Greenwich had no land near by which was available for the disposal of sewage, &c.

Since then no further attempt has been made to obtain more hospital accommodation, and most of the cases which occurred after September 8th have been treated in their own houses. Out of a total number of 358 persons notified up to the first day of the enquiry (October 18th), 138 had been admitted to the hospital, and 220 had been treated in their houses.

The method of dealing with these cases has been as follows:—The medical officer visits when the case is reported, orders medicines, disinfectants, and whatever else is required, and goes again when he is sent for. Water-carriers are provided, and a weekly pension of 1/ or 1/6 per week is given to each person who is ill. The medical officer visits again at the end of the illness, and formally discharges the person from treatment, when the pension is withdrawn. The person is then allowed to go about again. Up to October 10th the houses were individually isolated and under the control of watchmen, but since that date (with the approval of the Board of Health) the separate watchmen have been withdrawn. The present system is to have constables patrolling the main roads of the district to see that no person under treatment in his own house goes about the village before he is released. The medical officer states that the dread of the withdrawal of the weekly pension acts as a sufficient check on these persons.

He states further that all serious cases are offered admission to the hospitals; and that in cases where there is no one at home to attend to a case the person is always admitted to hospital. Of the 8 cases who have died in their own houses, three were adults who refused to go to hospital, and 5 were children whose parents refused to let them go.

CONTROL OF THE EPIDEMIC.

It is to be noted that at the time of the outbreak in this district, no vaccine lymph was procurable. The medical officer applied for 2,000 tubes, but only received 150 out of the first supply that arrived. Since the arrival of a full supply a vigorous effort has been made to vaccinate the population of the district. The medical officer is certain, and the public vaccinator assured me, that every one in the district had now had an opportunity of being vaccinated. It is estimated that of the 2,150 inhabitants, about 1,500 have been vaccinated. Of the remainder, 333 have had small-pox, and the others (about 300) persistently refuse to be vaccinated on religious grounds. The medical officer states that all the cases recently reported are persons who have refused vaccination, and many of these are living in houses where small-pox actually exists at the present time. The epidemic in this district will continue until all these persons have had the disease. The leader of the religious movement which condemns vaccination, has died of smallpox, and this has had some effect in breaking down the opposition to it; but there remains a section of irreconcilables.

A remarkable instance of the effect of vaccination in controlling the spread of small-pox is mentioned by the medical officer in his statement, in the case of Taitt's Village, where 8 cases were found one day in two houses. He immediately vaccinated 70 persons in the neighbourhood, with the result that the disease did not spread further except to two persons in an adjoining house, who were not at home at the time of the vaccination, and were therefore not protected. This occurred five weeks ago, so that there is no likelihood of its re-appearance.

At my second visit on October 21st, I specially asked whether the Board had made any effort to obtain further hospital accommodation. The Acting Chairman referred me to a letter written by the Vestry of the parish to the Colonial Secretary, in which the Vestry made a general appeal for assistance in dealing with the small-pox epidemic. There was

no reference in this to the need of hospitals, and it was not stated that the Sanitary Commissioners desired to build or arrange for more hospitals. In another letter to the Board of Health, to which I was referred, it is stated that the local Board was "willing to build, if money was provided beforehand." No special appeal stating that more hospitals were wanted, and that the Board was unable to obtain them, ever reached the Governor, or the Board of Health. A copy of the first letter alluded to is attached to the statement of the Acting Chairman.

CONCLUSIONS.

After a careful enquiry, I find the following facts proved :—

(1.) The epidemic in the infected district spread rapidly and soon got entirely out of hand, and the following causes contributed to this result :—

1. The first case was not discovered until many persons in various parts of the village had been already infected.

2. There was no lymph available, and consequently no vaccination could be done at an early period of the epidemic.

3. The local Board did not assume an effective control of the outbreak at the beginning, and 22 days elapsed after the notification of the first case before any hospital accommodation was provided.

(2.) Eight days after the hospitals were opened no more beds were available. Six weeks have elapsed since that date, 300 (or nearly 300) cases have occurred, and the local Board has made no serious effort to procure more hospitals.

(3.) Since the abandonment of the hospital system for all cases, the measures taken to treat cases at their own homes have been as good as possible under the circumstances. This does not absolve the board from the responsibility of allowing 58 per cent. of the cases in the infected district to be treated at home under unfavourable conditions.

(4.) Leaving out of account the persons who refuse to be vaccinated, the epidemic in the infected district is now well under control, and the persons who are now becoming infected are those unprotected by vaccination.

(5.) The disease has been effectively controlled in six other places in the parish where it has appeared.

(6.) The local Board has now realised its responsibilities in regard to the epidemic. On the 18th instant, the aid of the police was requested to remove three cases from a house where removal by the sanitary authorities had been resisted.

The progress of the epidemic in this parish has been a valuable object-lesson to the island, and will not be soon forgotten.

I desire to state that the Sanitary Commissioners have welcomed this enquiry, and I have received every possible assistance from the Acting Chairman, the Clerk of the Board, the Medical Officer, and the other officials of the Board.

JOHN HUTSON,
Poor Law Inspector.

October 23rd, 1902.

Copy of Statements taken at the Enquiry into the Small-Pox Epidemic in St. James, October 13th, 1902.

Mr. E. R. Deare, Acting Chairman of the Sanitary Commissioners: "I was not Chairman at the time of the outbreak, but an ordinary member of the Board. On referring to the minutes I find that the first case of smallpox in the parish was discovered on August 8th at 9 p.m. and reported next morning. A meeting of the Sanitary Commissioners was held the same day. The Board decided that Searles, the father of the patient should be prosecuted for not giving notice of the case which had existed since July 26th—13 days in all, and 9 days since the rash came out. The Board also decided to quarantine the house, but under the circumstances did not think it advisable to remove the patient. A watchman was put in charge, and was further directed to report any person in the district he may know of ailing, so that the Doctor may see them with a view of preventing the spread of the epidemic. At this time the school-house at Fitt's Village (near Prospect) and the schools at St. Alban's had been authorised by the Board of Health to be used, the latter having been applied for on August 5th. The next meeting of the Sanitary Commissioners was held on August 18th at the request of Dr. Archer, to consider what steps should be taken with the small-pox patients: as they were on the increase, 8 more cases being now in the parish. The Board decided that the present system of quarantine was of no use, as it in no way prevented the spread of small-pox and the Clerk was directed to write to the Board of Health and ask them if they was any objection to their abolishing it in this parish. The Board also decided to write to the Governor through the Colonial Secretary with a view to getting vaccination made free to all labourers, artisans and servants. This was done the same day.

The 8 cases referred to in the minutes had all occurred in the quarantined house with one exception, and that was next door, a niece of Searles', and that house was also quarantined.

Up to this time the schools set apart as hospitals had not been furnished, because the Board did not think advisable to bring cases into a healthy part of the parish.

A sub-inspector for the district was appointed on August 23rd, to hunt up cases, and see that the watchmen were doing their work.

Another meeting was held on August 5th. By this time 7 more cases had occurred, making 16: one in Searles' house, and the other in six separate houses near by, 3 in Baywood Village, 2 in Gilkes' Village, and 1 on Ape's Hill Tenantry, all practically in the same village, and all 'contacts' of Joseph W. Searles. The Board had applied some days before to the Board of Health to admit cases to Pelican Island, but received a communication dated August 20th, which stated that no case could be received owing to want of room.

The Board decided to apply for the two schools in Baywood Village to be used as hospitals, and the order of the Governor-in-Executive Committee was issued on August 28th.

The Board next met on August 29th, when they were informed that 18 fresh cases had been discovered on the previous day, making 34 in all. These occurred in the following places:—Baywood Village 9 (2 in Searles' house), Endeavour Village 8 (4 in a house belonging to Searles), and 1 at Orange Hill, and all were contacts of Searles. All these houses were at once isolated according to law.

A Committee was appointed to interview the Colonial Secretary on subjects connected with the epidemic. The Committee had an interview with him on the same day, and he recommended that the cases should be moved to the schoolhouses without delay. Material was at once obtained in Bridgetown, and next morning (Saturday) cots were put in hand, and by Tuesday morning 35 cots had been made, working day and night.

Another meeting of the Sanitary Commissioners was held on Monday morning September 1st at which it was decided to open the schools at once for which preparations had already commenced on the previous Friday.

The schools were opened that day and one patient from Holder's was admitted, and after that the cases were taken in until the hospitals were filled.

An adjoining building was rented, and the three houses accommodated about 62 cases.

At the same meeting it was reported that Searles had sold shop goods to a woman in Rock Hall Village, St. Thomas, and it was decided to take steps to prove the truth of this report, and to prosecute if evidence could be obtained.

The Board got information from the Rev. Thomas, mentioning names. These people were called on, and they all said that they had heard so, but could not prove it.

The Board also took the opinion of the magistrate, and a solicitor in Bridgetown, as to the possibility of prosecuting Searles for concealing a case of smallpox, and for selling shop goods while under quarantine. No evidence could be obtained of either fact, and the Clerk of the Board was told by the solicitor that in his opinion, even if the latter case could be proved the wording of the Act did not cover the offence, viz., selling shop goods while under quarantine. There was no evidence to prove what goods had been sold, and on what days. With regard to the concealment of the case, the Board was informed that it must be proved that Searles knew that he was concealing a case of small-pox; and from information got from the Medical Officer it appeared that Searles thought it was a rash the boy suffered from yearly, and his medical attendant had telephoned the Medical Officer that he had better be careful, as he had lately attended the boy with 'pustular itch.'

The other schools, Fitts Village and St. Alban's, previously appointed, were also fitted up, and were ready for occupation by September 18th. On September 8th the schoolhouses at Orange Hill and Greenwich were applied for, as by then the hospitals were quite filled up, and the applications have been granted.

The Board has not used these schools, (1) owing to a suggestion contained in a circular letter dated September 16th from the Board of Health that some other building should be obtained, either by renting or building, for the accommodation of small-pox patients; and (2) because there was no land available for putting away the sewage. There was no building in the neighbourhood to be obtained, and it was not thought advisable to use the Almshouse for the purpose.

The Board is willing to build if the necessary funds can be provided, and an estimate was sent to the Colonial Secretary on September 30th, for a building 100 x 25ft.

Since the hospitals were filled up, the houses have been isolated, the worst cases sent to hospital, and the other cases have been treated at home as pensioners, at rates varying from 1/6 to 1/ per week for each person. Water-carriers have also been provided. The amount spent on out-door relief to date is \$206.92 (130 persons on 20th.)

I consider that the Board has done all that it could possibly do under the circumstances. I have personally visited the place on several occasions. The principle the Board has worked on is to treat all the cases of small-pox occurring in the parish in this village, by removing cases occurring elsewhere in the parish to this infected neighbourhood. So far it is not epidemic anywhere else.

Until cases occurring elsewhere are removed to the hospital they are carefully watched and isolated. After their removal the houses are disinfected, and the Sanitary Inspector visits daily to see if there are fresh cases. The vaccinator of the district is also sent to

vaccinate in the neighbourhood. On being asked by the Poor Law Inspector why the Board did not arrange for further hospital accommodation after the hospitals were filled up, the Acting Chairman said that it was because there was no ready money to spend on building, and to pay workmen, etc. The Board did not feel justified in applying to the Vestry to lay a new rate, because there is great difficulty in getting in the taxes that have been already levied for the year.

In this connection the following extract from a letter to the Board of Health dated September 23rd, expresses the willingness of the Board to build: 'The Board would be quite willing to build, if the necessary means could be provided beforehand, they not having any at their disposal that can be used for any such purpose.'

But an estimate of probable expenses to the end of the year sent in on September 29th at the request of the Government, contains an item of £250 for a new hospital building. The Board as soon as it came to the end of the hospital accommodation treated bad cases only in hospital, and allowed the others to stay at home. If funds were forthcoming more accommodation would have been provided."

The ACTING CHAIRMAN further stated that the Board had made itself responsible for all food-stuffs, fittings, and clothing for the hospitals, which had been obtained on credit in Bridgetown; and nothing of that kind has been paid for.

The Medical Officer, Dr. LEONARD ARCHER, corroborated the statement of the Acting Chairman, and furnished many of the statistics given by him. He further stated the first case (when discovered) had already infected 35 persons in 24 different houses (as proved by the occurrence of cases afterwards), and these cases were discovered at periods varying from 8 to 12 days after the disease broke out, and had already infected about 120 people.

It was difficult to find the cases at first, as they tried to hide the disease and would not admit having cases in the house. Up to date (October 18) the total number of cases is 358, of which 138 have been admitted to hospital, 62 discharged and 22 have died (14 in hospital and 8 in their own houses.) All the cases that have died in their own houses were offered the hospital and refused to go, or were children whose parents refused to let them go. In such cases, if they remain in their houses, I go back to see them, give them medicines, disinfectants and whatever they require, and go again to see them whenever they send for me, and the parochial authorities supply them with money and water-carriers. All bad cases are admitted to hospital if they will go. Of the total number reported, 333 have occurred at Baywood district and 25 at other places, viz., Springhead 2, Taitt's 10, Greenwich 2, Hometown 1, Mount Standfast 1, Payne's Bay 3, Fitts' Village 2, Holder's 1, Thorpe's 1, Sea View 2. At the time of the outbreak this district was unvaccinated and I could not obtain lymph. On August 21st when the cases were confined to 5 houses, I obtained some lymph from a private source and vaccinated 104, and went on from arm to arm, until I had done some 555 arms, more than half of them in the infected district.

On September 13th Government lymph was obtained, and that day I vaccinated 100 people in that district. At Taitt's Village quite close to Baywood Village I found six cases in one house, and two in another, and I vaccinated 70 persons around—and smallpox has been limited to those two houses, with the exception of a neighbouring house in which 2 unvaccinated persons afterwards took the disease. This was five weeks ago, and no other cases have occurred.

In other places the cases have been removed to Baywood hospital, and the districts around have been vaccinated as much as possible, that is, as the people will allow. So far, it has not spread to other houses in any of these districts, and in 3 cases it has spread to one other inmate in the house.

The whole parish has been divided into three districts and a sub-inspector in each district goes round daily and makes a house-to-house visitation to discover suspected cases, which are at once notified to me.

The epidemic in the Baywood district will be over in a month or two. Roughly speaking, about 1,500 have been vaccinated. 333 have had smallpox and there are about 300 left. All these have had an opportunity of being vaccinated and have refused it on religious grounds, viz., that their bodies are the temples of God, and that they would not defile them. One man who acted as messenger to the hospital was vaccinated by me, and rubbed it off with lime juice. It did not take, and he has since died of small-pox. His wife, who also refused vaccination, is now down with small-pox. The epidemic will go on until all these people have had it, which will be very soon, as most of them are in houses in which small-pox already exists.

In notifying cases Orange Hill will also include Lancaster and Gregg Farm. Rat Hall and Jackman's Gap are included in Endeavour; and Ape's Hill with Baywood.

Mr. A. HOLDER, Public Vaccinator of the district, gave evidence:—"I have been vaccinating for a month, and have vaccinated 851 people to date. The other vaccinations in the district have been done by Dr. Archer, Dr. F. J. Clarke, and Mr. Seale. I have not refused to vaccinate anyone that has applied, and many people have refused to be vaccinated. I think there are between 300 and 400 unvaccinated in the village still, and they are most of them 'dissenters,' and do not believe in vaccination.

"I am sure that within the last month everybody in the district has had a fair chance of being vaccinated. I vaccinated 344 in the first week, and 57 last week which shows that I have time for vaccinating if the people would be vaccinated."

Statements made at second meeting on October 21st, 1902,

The ACTING CHAIRMAN stated, in answer to an enquiry as to whether any application had been made for more money, that on September 10th, the following letter was sent by the Vestry to the Colonial Secretary :---

"Sir,—I am directed by the Vestry of this parish to lay the following facts before you and ask you to put them before His Excellency the Governor at an early date with a view to their being considered.

"That in consideration of the rapid spread of smallpox in this parish, which amounts to 96 cases up to date, and the very heavy outlay consequent thereon, which the taxpayers are quite unable to pay in consequence of the great depression in the sugar industry, the Board feel it their duty as the representatives of those taxpayers to approach His Excellency and ask him at an early date to lay the matter before the Legislature, and ask that the expenses attendant thereon be paid from the general revenue of the colony, and that the same be paid monthly, as in the present circumstances of the parish the money available will not be more than enough to meet one month's expenses with a surplus, and pay the other demands of the parish for which purposes the funds were raised."

I have the honour to be,

Sir,

Your most obedient Servant,

SAMUEL GREENIDGE,
Clerk of the Vestry.

In reply to enquiries as to how the sick are managed at home, the MEDICAL OFFICER stated that individual isolation of houses was discontinued a week ago. Watchmen and constables are on duty on the main roads to see that no persons suffering from smallpox are allowed to walk about. Persons suffering from smallpox in their own houses are not allowed to walk about until they have been formally released by the Medical Officer. As soon as this is done the houses are disinfected, and the weekly pension is withdrawn.

The weekly pension is useful in preventing concealment, as a householder always reports a new case in order to get a further pension.

Admission to hospital is used for persons who have no one to attend to them at home, or are very seriously ill. The number of houses infected to date in the Baywood district is upwards of 70, and in many houses the whole family has been ill, especially when they refuse to be vaccinated.